HEALTH EMERGENCY OPERATION CENTER NETWORK OF NEPAL

— The Voyage and the Vista —

HEALTH EMERGENCY OPERATION CENTER NETWORK OF NEPAL

The Voyage and the Vista

Health Emergency Operation Center Network of Nepal:

The Voyage and the Vista has been jointly produced by the Health Emergency and Disaster Management Unit (HEDMU)/ Health Emergency Operation Center (HEOC), Ministry of Health and Population (MoHP), Government of Nepal (GoN) and WHO Health Emergencies (WHE) Programme Team, WHO Country Office for Nepal.

Suggested Citation

Ministry of Health and Population (2021). Health Emergency Operation Center Network of Nepal: The Voyage and the Vista.
Kathmandu: Ministry of Health and Population.

Government of Nepal
Ministry of Health and Population

Message

It is my immense pleasure to write a few words on the Health Emergency Operation Centres (HEOCs) and their role in disaster risk reduction in the health sector in the country.

As we are aware, Nepal is vulnerable to various natural as well as human induced disasters that cause threat to the health and lives of people and the economy of the country. As a coordination, communication and information management center for emergencies/ disasters across Nepal, including government agencies and other disaster risk management stakeholders, the National Emergency Operation Centre (NEOC) was established in 2010 under the Ministry of Home Affairs. However, a need was felt for establishment of a similar entity for health-related emergency preparedness, response readiness and disaster management. The HEOC was then conceptualized in 2012 and two years later in 2014 it was established with the support of WHO at the premises of the Ministry of Health and Population (MoHP), Government of Nepal.

The HEOC functions as the secretariat of MoHP-Incident Command System (ICS) during any public health emergency acting as the high-level operations center for the national health sector. It has various roles during the pre-disaster, disaster and post-disaster phases. Its role and usefulness have been evident all during the response to the Nepal Earthquake 2015 and the COVID-19 pandemic. Provincial HEOC's (PHEOC) role in response to COVID-19 has been highly significant and remarkable. They have helped to coordinate with other sectoral EOCs, Hub and Satellite Hospitals Network and relevant health/ non-health sector partners for preparedness and response readiness at the provincial level and right up to the district level.

The HEOC network of Nepal has been playing a crucial role in strengthening our capacity to reduce, mitigate and manage the adverse impacts of known and for unforeseen hazards. I would like to congratulate the HEOC network for the various roles it has been performing for enhancing national health security. It is my desire that this network would be further strengthened and continue to play a critical role in ensuring the resilient of the health system in our country and serve as a model for other countries in the region and beyond. I would like to thank all the development partners especially WHO for walking with us and supporting us in the journey and request them to continue doing so going forward.

This report, being released during the handover function of the expanded and refurbished national HEOC and the recently established PHEOCs, documents the challenges we have faced, the milestones achieved and the goals we desire to attend. I commend the Health Emergency and Disaster Management Unit working under me for bringing out this report.

Mr. Laxman Aryal
Secretary, Ministry of Health and Population

Message

Nepal is vulnerable to emergencies that pose serious threat to health, lives and livelihoods. This has been illustrated by the devastating earthquake of 2015, the floods and landslides of 2017 and the current COVID-19 pandemic.

While natural disasters, disease outbreaks and other acute public health risks are often unpredictable, the adverse impact can be mitigated through a robust preparedness, readiness and response.

In accordance with the International Health Regulations (2005), Nepal has taken several important steps for strengthening emergency preparedness and response. It has strengthened legal frameworks, plans and policies, established Health Emergency Operation Centers and telemedicine centers at national and provincial levels; formed Emergency Medical Deployment Teams (EMDTs); and established a hub satellite hospitals network covering the country.

Establishment of the Health Emergency Operation Center (HEOC) is a key milestone in line with compliance to the International Health Regulations (2005) to strengthen communication and coordination for effective public health response. One of the key accomplishments of the Health Emergency and Disaster Management Unit (HEDMU) / the Health Emergency Operation Center (HEOC) is completing an assessment of the national Emergency Care System (ECS) that has led to identification of action priorities.

This report captures the journey so far and the steps that need to be taken by the HEOC network of Nepal to strengthen the national health emergency risk management capacity for a resilient health system.

The World Health Organization will continue to support the efforts of Nepal to strengthen the ability to detect, assess and respond to public health events to meet commitments under the International Health Regulations (2005) and to reduce disaster risks to achieve the relevant global targets of the Sendai Framework for Disaster Risk Reduction 2015-2030.

Dr. Rajesh Sambhajirao Pandav
WHO Representative to Nepal

Remarks

Nepal is one of the most disaster-prone countries in the world. Along with natural disasters various disease epidemics are also encountered frequently. For such emergencies, coordinated approach and optimal use of resources is the cornerstone of effective health response. Lessons from response to different disasters indicated that a dedicated operation center to coordinate different stakeholders for health preparedness and response is essential. As a result, the Health Emergency Operation Center (HEOC) was established in 2014 with the support of WHO. This HEOC was later incorporated as part of the Health Emergency and Disaster Management Unit (HEDMU) directly under the Secretary, Ministry of Health and Population (MoHP), Government of Nepal in 2018. The HEOC functions as the secretariat of the Incident Command System (ICS) of the MoHP for any public health emergency or disaster. It works closely with different stakeholders responsible for health and coordinates directly with the National Disaster Risk Reduction and Management Authority/ National Emergency Operation Center (NDRRMA/ NEOC).

During the massive earthquake that struck Nepal in 2015, immediate activation of the HEOC had aided in streamlining efforts from the central level. Since then, HEOC has been the main coordinating center for the health sector response during the floods and landslides in 2017; Bara, Parsa windstorm in 2018 and the ongoing COVID-19 pandemic. During any public health emergency, where the HEOC gets activated, the health and nutrition clusters are usually activated to support the response. For decentralized preparedness and response coordination in the health sector, the need was felt for the establishment of Provincial HEOCs (PHEOC). Subsequent to response to the Nepal earthquake 2015, either permanent or temporary PHEOCs have been established in all the 7 provinces and have been coordinating and playing a vital role during COVID-19 response.

The HEOCs function as the command center to organize and manage the resources and responsibilities to deal with emergency response. In addition to response, preparedness and response readiness activities like establishment and strengthening of hub and satellite hospitals network, formation and orientation of Emergency Medical Deployment Team (EMDT), stockpiling of emergency medical logistic, conducting Emergency Care System Assessments etc. have been coordinated by the HEOCs. Several of these activities have been conducted as part of disaster recovery interventions. These activities have helped to strengthen our country's health security. However, we need to further develop, strengthen and maintain our capacity to mitigate disaster risks, enhance readiness and respond promptly and effectively to public health emergencies. I offer my deepest gratitude to all the members of the HEOC network and various organizations, especially the WHO for extending their generous and continued support. I would like to thank WHO Representative to Nepal (Dr. Jos Vandelaer and Dr Rajesh Sambhajirao Pandav), Dr. Reuben Samuel, Dr. Hyon Chol Pak, Dr. Rajan Bikram Rayamajhi, Dr. Subash Neupane, Dr. Dipendra Gautam, Deepesh Sthapit, Damodar Adhikari, Dr. Gaurav Devkota, Prahlad Dahal, Bimal Singh Bist, Sanjib Gautam and Ganesh Singh Dhami for their for their tireless effort for the establishment and strengthening of national and provincial HEOCs.

It is a pleasure for my team, building on the efforts of my predecessors to have the HEOC expanded and equipped and all the PHEOCs established and handed over to the respective ministries. The progress made in establishing and operationalizing the HEOC network in Nepal is captured in this report being released as part of this handover function.

....

Dr. Samir Kumar Adhikari
Chief, HEDMU/HEOC

Remarks

Health Emergency Operations Centers (HEOCs) play a critical role in enabling member states to coordinate and streamline disaster risk management capacities in the health sector and facilitate enhanced health security interventions undertaken by the National Focal Point for International Health Regulations (IHR).

WHO established the Public Health Emergency Operations Center Network (EOC-NET) in 2012 to promote best practices and standards and support capacity building in member states for establishing and operationalizing HEOCs. Consequently, with the support of WHO, the National HEOC was established in March 2014 at the premises of the Ministry of Health and Population (MoHP), Government of Nepal (GoN).

The value of the HEOC became self-evident in the aftermath of the Nepal Earthquake 2015, when it became the command center for health sector response owing to its fail-safe infrastructure, information and communication facilities and coordinated operations through the Incident Command System. As a direct result of this, the then Hon. Health Minister requested WHO during his participation at the World Health Assembly that year for support to establish HEOCs in the five development regions of Nepal.

In line with the federalization of Nepal and the Framework for Public Health Emergency Operation Centers published by WHO in 2015, the WHO country office for Nepal, with the support of the newly established three level WHO Health Emergencies (WHE) Programme initiated the establishment of provincial HEOCs, using resources provided by partners for post-earthquake reconstruction.

Only three provincial HEOCs could be established immediately since the headquarters of some provinces was not decided. Overtime, utilizing the heightened felt need for HEOCs during subsequent emergencies HEOCs have been established in all seven provinces. The formation of the Health Emergency and Disaster Management Unit (HEDMU) directly under the Secretary MoHP in 2018 hastened and streamlined this endeavor, including expansion of the national HEOC for housing it.

The expansion of the HEOC network in Nepal and its recognized role in facilitating interventions required for resilience of the health system to emergencies, has gone hand-in-hand with the expansion of the WHE Programme in the country over the last five years. With MoHP endorsement, the WHE field personnel are deployed at the national and provincial HEOCs and support the government counterparts and partners to systematically implement interventions developed jointly with the federal and provincial health authorities for emergency/ disaster risk management in a coordinated manner.

The WHE Programme team is privileged to have been part of the successful *voyage* to establish the HEOC network of Nepal. There are miles to go, many challenges to face and an ever-widening *vista* of opportunities for the HEOC network to strengthen disaster risk reduction; enhance emergency preparedness and readiness; enable effective response; and build-back-better while recovering from disasters.

Dr. Reuben Samuel
Team Lead – WHE Programme
WHO Country Office for Nepal

TABLE OF CONTENTS

Introduction

Role of Preparedness and Response Readiness

HEOC's Role in Response to Emergencies

Challenges and Way Forward

Annex

Gallery

LIST OF TABLES AND FIGURES

Tables

Figures

ABBREVIATIONS

3Ws	:	Who, What, Where
4Ws	:	Who, What, Where, When
ADRA Nepal	:	Adventist Development and Relief Agency Nepal
B-GAN	:	Broadband Global Area Network
BIMSTEC	:	Bay of Bengal Initiatives for Multi-Sectoral, Technical and Economic Cooperation
BNMT	:	Birat Nepal Medical Trust
CONOPS	:	Concept of Operations
CSD	:	Curative Service Division
DG-ECHO	:	Directorate-General for European Civil Protection and Humanitarian Aid Operations
DoHS	:	Department of Health Sciences
DRM	:	Disaster Risk Management
DRRM	:	Disaster Risk Reduction and Management
DUDBC	:	Department of Urban Development and Building Construction
ECS	:	Emergency Care System
ECSA	:	Emergency Care System Assessment
EDCD	:	Epidemiology and Disease Control Division
EDP	:	Extrenal Development Partner
EMDT	:	Emergency Medical Deployment Team
EMT	:	Emergency Medical Technician
EOC	:	Emergency Operation Center
FMO	:	Field Medical Officer
GIZ	:	Deutsche Gesellschaft für Internationale Zusammenarbeit
GLOF	:	Glacial Lake Outburst Floods
GoN	:	Government of Nepal
GPS	:	Geographical Positioning System
HD	:	Health Directorate
HDPRP	:	Hospital Disaster Preparedness and Response Plans
HEDMU	:	Health Emergency & Disaster Management Unit
HEOC	:	Health Emergency Operations Center
HI	:	Huminity and Inclusion
HICS	:	Hospital Incident Command System
HSI	:	Hospital Information System
HSI+	:	Hospital Safety Index Plus
HMIS	:	Health Management Information System
HOPE	:	Hospital Preparedness for Emergency
HSA	:	Hospital Safety Assessment
ICS	:	Incident Command System
ICT	:	Information Communication & Technology
IMA	:	Information Mangement Assistant
IMU	:	Information Mangement Unit

INGO	:	International Non-Governmental Organization
KfW	:	Kreditanstalt für Wiederaufbau
LGO	:	Local Government Operationalization
MCM	:	Mass Casualty Management
MdM France	:	Medecins du Monde (MdM) France
MERLIN	:	Medical Emergency Relief International
MoHA	:	Ministry of Home Affairs
MoHP	:	Ministry of Health and Population
MoSD	:	Ministry of Social Development
NAPA	:	National Adaptation Programme of Action
NAS	:	Nepal Ambulance Service
NEA	:	Nepal Engineering Association
NEMDT	:	National Emergency Medical Deployment Team
NEOC	:	National Emergency Operation Center
NGO	:	Non-Govermental Organization
NHEICC	:	National Health Education Information Communication Center
NHSS	:	Nepal Health Sector Strategy
NHSSP	:	Nepal Helath Sector Support Programme
NMTs	:	National Medical Teams
NRCS	:	Nepal Red Cross Society
OCMC	:	One Stop Crisis Management Centres
OSCAR	:	Open System for Communication in Realtime
OXFAM	:	Oxford Committee for Famine Relief
P/REOC	:	Provincial Health Emergency Operation Centers
PAHS	:	Patan Academy of Health Sciences
PHEOCs	:	Provincial Health Emergency Operation Centers
PSS	:	Palliative Service in Health System
RCC	:	Risk Communication and Community Engagement
RRT	:	Rapid Response Teams
RTA	:	Road Traffic Accidents
SIMEX	:	Simulation Exercises
SoP	:	Standard Operating Procedure
ToR	:	Terms Of Reference
TTx	:	Table Top Exercise
UIMS	:	Uniform Information Management System
UN	:	United Nation
UNFPA	:	United Nations Population Fund
UNICEF	:	United Nations International Children's Fund
WASH	:	Water, Sanitation and Hygiene
WHA	:	World Health Assembly
WHE	:	World Health Emergencies
WHO	:	World Health Organization

Ministry of Social Development (MoSD), H

Satellite Networks, Health Emergency Ope

Sudurpaschim Province   Karnali Province   Gandaki Province   Lumbini

Surkhet Provincial Hospital

Karnali Academy of Health Science

Mahakal Hospital

Dhaulagiri Hospital

Pokhara Science

Dadeldhura Hospital

Seti Hospital, Dhangadhi

Bheri Hospital, Nepalgunj

Rapti Academy of Health Science

Rapti Provincial Hospital

Lumbini Hospital Butwal

Bharatpur Hospital

Narayani Hospital

Janak

Gajendra Narayan Singh Sc

B.P Koir

Map Legends

HUB Hospital	
National Health Emergency Operation Center (NHEOC)	
Provincial Health Emergency Operation Center (PHEOC)	
Temporary PHEOC	
Ministry of Social Development (MoSD)	
Health Directorate (PHD)	

ealth Directorates (HD), Hub and eration Centers (HEOCs) Location

Legend:
- Province
- Bagmati Province
- Province 2
- Province 1

Labeled hospitals:
- Shree Birendra Hospital
- TU Teaching Hospital
- Bir Hospital
- Civil Hospital
- Academy Hospital
- Bhaktapur Hospital
- Patan Hospital
- Dulikhel Hospital
- pur Hospital
- agarmatha Hospital, Saptari
- la Institute of Health Science, Dharan
- Koshi Hospital, Biratnagar
- Mechi Hospital

Districts shown: GORKHA, RASUWA, HADING, NUWAKOT, SINDHUPALCHOK, DOLAKHA, KATHMANDU, LALITPUR, BHAKTAPUR, KABHREPALANCHOK, RAMECHHAP, SOLUKHUMBU, SANKHUWASABHA, TAPLEJUNG, MAKAWANPUR, SINDHULI, OKHALDHUNGA, KHOTANG, BHOJPUR, TERHATHUM, PANCHTHAR, PARSA, BARA, RAUTAHAT, SARLAHI, MAHOTTARI, DHANUSHA, SIRAHA, UDAYAPUR, DHANKUTA, ILAM, SAPTARI, SUNSARI, MORANG, JHAPA

INTRODUCTION

Background

Nepal as one of the most disaster-prone countries in the region encounters a range of geophysical and hydro-meteorological hazards such as Earthquakes, Floods, Landslides, Lightning, Fires, Glacial Lake Outburst Floods (GLOF), Avalanches etc. Nepal is ranked 4th in risk due to climate change; 11th most at risk for Earthquake; 20 th in overall disaster risk and 30th in terms of floods and landslides(Global Report on Disaster Risk: 2003). Different disease, epidemics and Road Traffic Accidents (RTAs) are also encountered frequently. All these hazards compounded by multi-dimensional vulnerability results in enormous damage to infrastructure, along with health consequences (morbidity and mortality).

Health is among the fundamental rights guaranteed by the Constitution of Nepal, 2015, even during emergencies.
Article 2 (35) states that "Every citizen shall have the right to free basic health services from the State, and no one shall be deprived of emergency health services". The Constitution provides sole authority to the local governments for disaster risk reduction and management and also a shared authority among federal, provincial and local governments. In line with these provisions, multiple legal frameworks have been put in place with a view to spell out the detailed structures, functions and interventions that are expected to be rolled out in case of disasters or emergencies and in mitigating or preparing for them.

The Disaster Risk Reduction and Management (DRRM) Act 2017 recognizes both risk reductionand management as integral elements of dealing with disasters. It proposes a clear multi-tier Disaster Risk Management (DRM) institutional structure at the national, provincial, district, local/municipal and community levels, as well as giving clear directions for the establishment of disaster management funds at the federal, provincial and local levels. The DRM structure is divided into two main bodies, the first comprising policy and administrative decision-making and supervisory roles (Disaster Risk Reduction and Management National Council and Executive Committee) and the second with implementation roles (National Disaster Risk Reduction and Management Authority and Disaster Management Committees at all levels).

The Local Government Operationalization (LGO) Act that was endorsed in 2017 helped establish disaster management structures and functions for each local government and their ward units. The Government of Nepal (GoN) endorsed the National Disaster Risk Reduction and Management (NDRRM) Policy, 2018 and Disaster Risk Reduction National Strategic Action Plan, 2018-2030 that provide a comprehensive planning framework for disaster risk reduction and management guiding government actors and stakeholders to achieve specific targets in different priority areas.

The Nepal Health Sector Strategy (NHSS), 2015-2020 was elemental for health sector in identifying plans and action points that refer specifically to disasters and emergency situations. Key among those plans and action points were establishment of a central supply department focused on developing inter-ministerial protocols for implementing hospital safety initiatives and updating of national level protocols and operational guidelines with clarity in roles and responsibilities for emergencies management. The strategy also envisaged to set up emergency response funds at the federal, provincial and local levels, along with initiating provincial emergency health management centers. It further proposed the development of a human resources mobilization plan for emergencies, as well as strengthening trauma management capacity in hospitals situated near highways and in major urban centers. Furthermore, National Adaptation Programme of Action (NAPA) was implemented for planning and preparedness for climate change induced disasters, Rapid Response Teams (RRTs) were to be formed at all levels and capacitated, and Mass Casualty Management Plans developed for all hospitals with more than 50 beds. Finally, it recommended that arrangements be made so that trained workers, either paid or volunteers, can be effectively mobilized during emergencies (Ministry of Health, 2017).

The Public Health Service Act, 2018 and Public Health Service Regulation, 2020 contain explicit provisions regarding emergency health services and management. According to them, rapid response and emergency medical teams are to be formed to provide immediate medical response during emergencies. They provide rights to all three tiers of government to develop and implement emergency health plans which must be in consonance with the standards determined by the Government of Nepal under federal law. Correspondingly, local level governments also have the authority to declare public health emergencies in accordance with prevailing laws and regulations. They also highlight the prevention, information and management of infectious diseases by health institutions, taking necessary steps for provision of treatment of infectious diseases in line with the Infectious Disease Act, 1964.

Despite the availability of different policies, acts and regulations for disaster management, most of the response interventions lack health specific components thereby increasing morbidity and mortality of the affected population. Moreover, lack of coordinated approach caused duplication of response efforts and non-optimal use of resources. Therefore, a health entity to act as a command and control center for coordinated and effective health specific response during any emergency or disaster was required.

Health Emergency Operation Center

An Emergency Operation Center (EOC) is a physical infrastructure as well as a functional mechanism for coordination of information and resources to support incident management activities, that may be located at a temporary facility or established in a permanent site. The National Emergency Operation Center (NEOC) was established in 2010 as a coordination and communication point for disaster information across Nepal, including government agencies and other response and recovery stakeholders (UN agencies, INGOs and NGOs).

The Ministry of Health and Population (MoHP), identifying the importance of such an operation center for the health sector, requested the World Health Organization (WHO) for its support in establishing a high-level operational command center for disaster and emergencies management.

The Health Emergency Operation Center (HEOC) was established at the premises of MoHP in 2014 that included both physical space as well as an approach for managing emergencies. WHO conceptualizes the Public Health Emergency Operation Center as a public health oriented EOC that integrates traditional public health services into an emergency management model.

It further emphasizes the Public Health Emergency Operation Center being part of a comprehensive program of public health emergency preparedness, planning and capacity building and supporting national disaster management authorities or entities. WHO thus supported MoHP in establishment of HEOC based on this concept of Public Health Emergency Operation Center.

The HEOC plays a pivotal role in facilitating and maintaining operational linkages between health sector multi-hazard preparedness and response mechanisms and the existing and emerging institutions/mechanisms for community, province and the central level disaster risk management initiatives in other sectors.

MANAGEMENT

Responsible for overall operation of events
(including coordinating risk communication)

OPERATIONS

At the field level, provides direct response to the event;
at higher levels, provides coordination and technical guidance

PLANNING

Data collection, analysis, and planning of future actions
based on the likely course of the event and the resources
available

LOGISTICS

Acquires, tracks, stores, stages, maintains, and disposes of
material resources. provides services to support the response

**FINANCE/
ADMINISTRATION**

Cash flow management; tracking of material and human
resource costs; budget preparation and monitoring;
production and maintenance of administrative records

Fig 1 : Components of HEOC

The HEOC operates and functions as a high-level operational command center for the MoHP. HEOC, while discharging the key mandate of operational coordination during emergencies, builds on and facilitates the implementation of policies and strategies and develops and updates planning tools, databases, etc. for multi-hazard health sector emergency risk assessment, risk mitigation, preparedness, and response readiness during the non-emergency settings. After the response period, the HEOC undertakes after-action reviews; facilitates and documents learnings; updates plans, strategies and tools; and coordinates and monitors the implementation of recovery interventions.

Pre-Disaster

- Planning
- Resource mapping
- Networking
- Capacity Assessment
- Roster management
- E-library establishment
- Disaster response/ MCM Planning
- Web Portal
- Capacity Mapping

Post-Disaster

- Restoration of health-care services
- Coordinate for infra-structure development
- Recording and reporting
- Coordination for long-term health need
- Build back better
- Study, analysis & recommendation

During Disaster

- Command center for Health Response
- Coordination with NEOC and other s takeholders
- Situation Analysis
- Early Deployment
- Resource mobilization
- Situation Update
- Press release & Public awareness
- Capacity Mapping

-Overall Information Management, Analysis and Dissemination

Fig 2: Role of HEOC

The Standard Operating Procedure (SoP) for HEOC was endorsed in September 2015, after more than a year of its establishment. In the federated context, a Health Emergency and Disaster Management Unit (HEDMU) of the MoHP has been mandated for the development of strategic and technical documents to guide and mentor federal and provincial level health entities for the management of public health emergencies. The HEDMU functions out of the HEOC which is its operational arm with technical and financial support from WHO, HEOC SoP was revised the SoP in 2018 to harmonize the incorporation of the HEOC as part of HEDMU directly under the Secretary, MoHP.

The HEOC was authorized with higher level mandates and started operating directly under the Health Secretary from 2018 whereas earlier it was under the Chief of the Curative Service Division of the MoHP. It functions as the Secretariat of MoHP-ICS during any health emergency or disaster. It works closely with the Department of Health Services and the Provincial Ministry of Social Development and Health Directorates and coordinates directly with the NEOC.

Secretary

Policy, Planning, Monitoring, Quality Assurance and Regulation
Chief Specialist - 1

Population Management and Health Coordination
Chief Specialist - 1

Policy, Planning, and Monitoring Division

Quality Assurance and Regulation Division

Health Coordination Division

Population Management Division

Administration Division

Health Emergency & Disaster Management Unit (HEDMU)/ Health Emergency Operation Center (HEOC)

Medical Officer
NA

Section Officer
NA

Field Medical Officers and Information Management Assistants supported from WHO

Fig 3 : Organogram of Ministry of Health and Population indicating the place of the HEDMU/HEOC

6

Terms of Reference for HEDMU

1. To work as a secretariat of the Ministry of Health and Population during health emergencies and disasters.

2. To work with the National Disaster Management Center under the Ministry of Home Affairs and other related bodies as a health sector Center point.

3. During health emergencies and disasters; coordination with the National Disease Control Center for rapid response (Epidemiology and Disease Control Division).

4. To work as a central communication body with the provincial and local levels during health emergencies and disasters.

5. Facilitating necessary assistance by coordinating with the affiliated international bodies, non-governmental organizations and organizations during emergencies and disasters.

6. Necessary coordination with the Hub and satellite hospital networks to facilitate service during emergencies and disasters.

7. Collect and store data relevant to health emergencies and disasters.

8. To coordinate with the National Disease Control Center for criteria determination and capacity development.

```
Incident Commander
Secretary, MoHP
```

```
Planning Manager
Chief, Planning Division,
MOHP
```

```
Logistic Manager (1)
Management Division
```

```
Logistic Manager (2)
```

```
Operation Manager (2)
Chief, HEDMU/HEOC
```

```
Communication
Manager
Chief, NHEICC/ HIS, MoHP
```

```
Operational Manager (1)
Chief, Quality Assurance &
Regulation Division
```

```
Finance Manager Chief,
Finance Division, MOHP
```
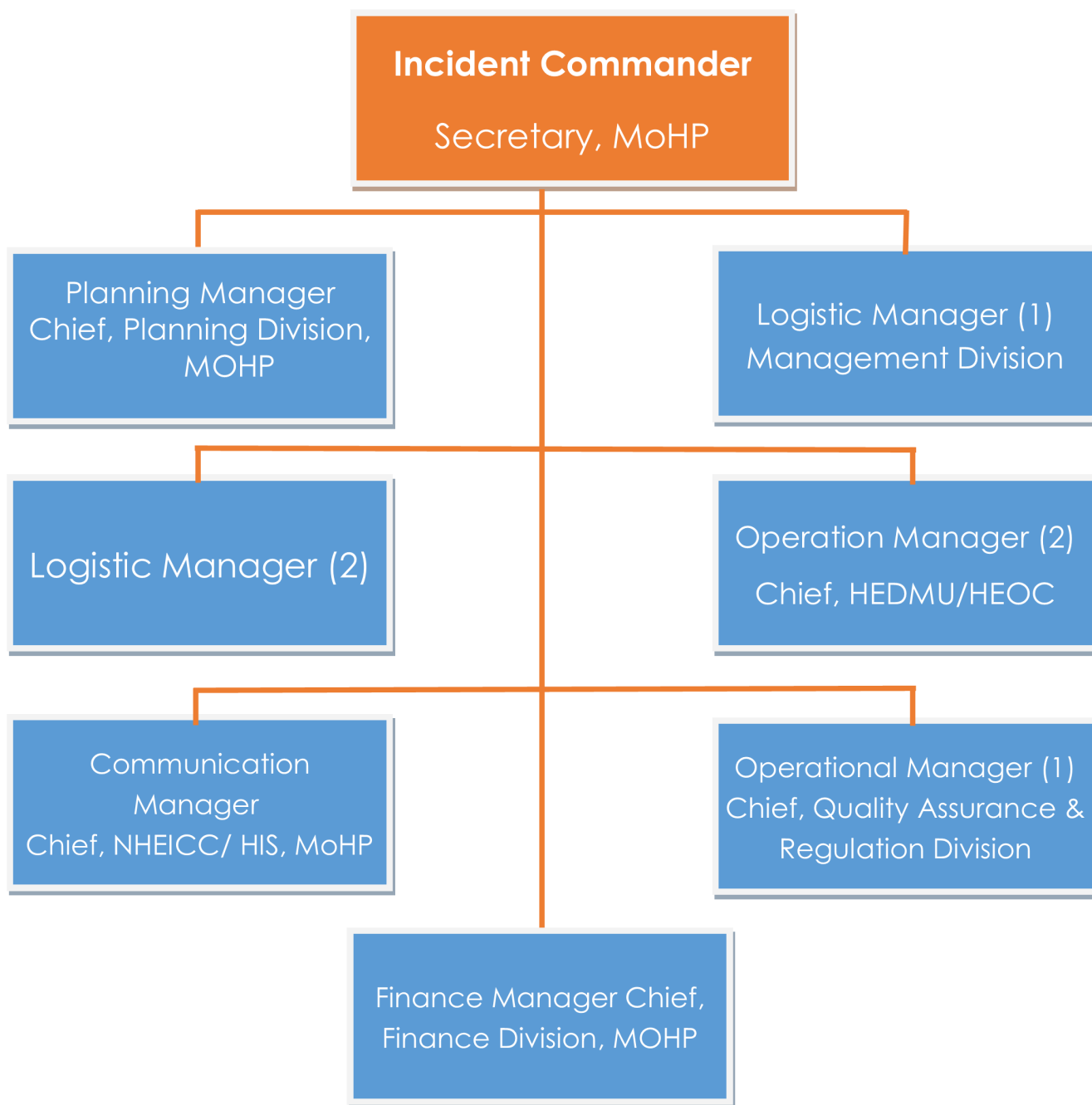
Fig 4 : MoHP- ICS Organogram (In Process of Revision)

The HEOC hosts necessary resources and data for effective coordination of response in emergencies. During emergencies, the center functions 24/7 with trained and dedicated staff (Annex 1). It is equipped with communication and information management infrastructure including land, cellular and satellite telephones, internet, radio frequency based wireless sets; television, computers etc. Thus, being well suited to function as the secretariat of the MoHP-ICS. To maintain the HEOC database and information portal, HEOC at the central level coordinates with NEOC, MoHP (Divisions, Centers and Departments) Central Referral Hospitals, Health Sector and External Development Partners (EDPs) to collect and update the information portal.

GOVERNMENT

Chief, HEDMU

Medical Officer-1

Section Officer-1

WHO Support

WHE Field Medical Officer

Information Management Assistant

Admin and support Staff
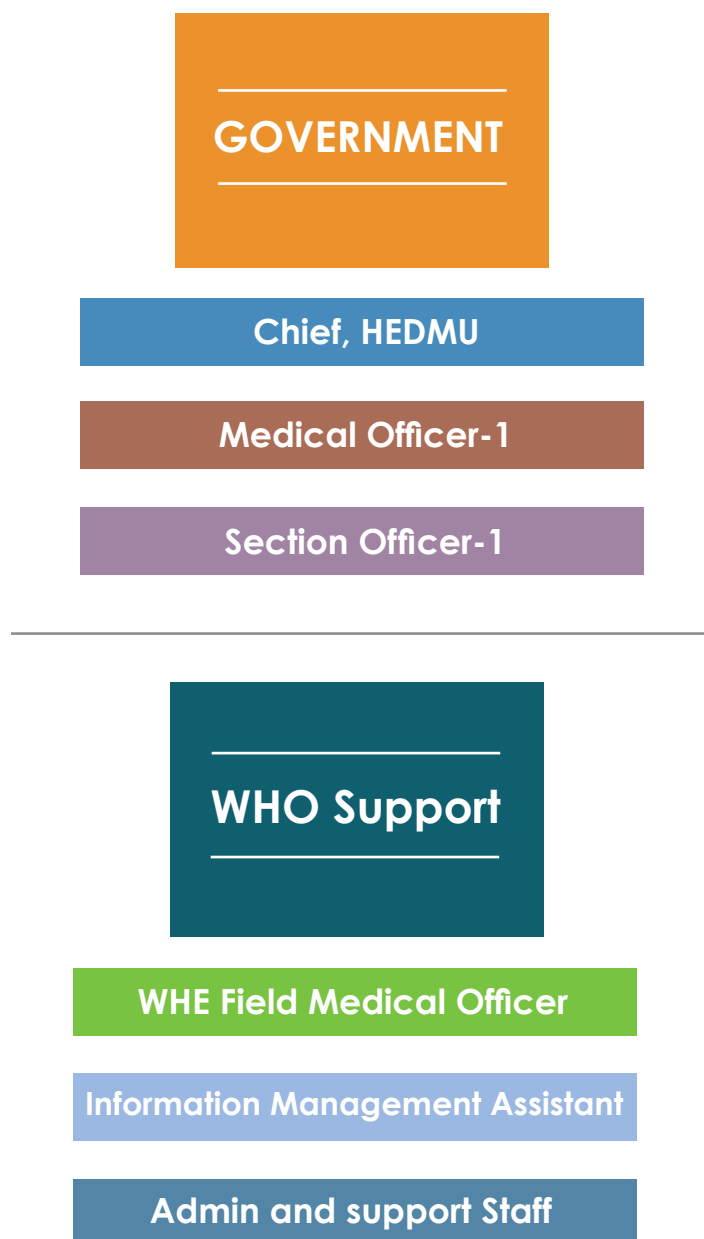
Fig 5 : Human Resource available at HEOCs for day to day Operation

Communication Infrastructure and Technologies

- **Landline, Cellular, Internet (50 Mbps)**

- **CISCO Device for Video Conference**
  - The CISCO device has been installed in all PHEOCs and weekly Video Conference is conducted for better coordination and updates.

- **Broadband Global Area Network (B-GAN): Satellite Communication**
  - This Satellite Communication technology is best used when all communication devices and channels shuts down. Using this technology, voice and data communication can be established.

B-GAN Satellite Phone

CISCO Video Conference Device

National HEOC and Provincial HEOC's network

In the federated governance system, a functional HEOC network is needed for achieving the objective of saving lives and reducing suffering during times of crisis across different levels.

Following on the success of effective response by the HEOC during the Nepal Earthquake, 2015, the then Hon. Health Minister requested WHO, during his participation in the 68th session of World Health Assembly (WHA), for establishing such HEOCs in each of the five development regions of Nepal. However, following federalization, these sub-national HEOCs had to be established at all seven provinces to act as command centers for the provincial government in case of any emergencies and disasters. Moreover, they were established as a coordination hub with roles and functions similar and complementary to the HEOC at national level. Their major function was to coordinate with Hub and Satellite Hospital Network, relevant health/ non-health sector partners and non-health EOCs for preparedness and response readiness at the sub-national level (Annex 2).

The main responsibility of the Provincial HEOCs is to act as information repository in the respective provinces and to maintain horizontal coordination with health sector partners and with other sectoral EOCs to collect and analyze data, make decisions that protect life and property, maintain continuity of MoHP interventions, within the scope of applicable laws and disseminate those decisions to all concerned agencies and individuals.

#	PROVINCE	ESTABLISHMENT DATE	STATUS	HQ
1	1	2019	Permanent	Biratnagar, Morang
2	2	2018	Temporary	Janakpur, Dhanusha
3	Bagmati	2019	Permanent	Hetauda, Makwanpur
4	Gandaki	2018	Permanent	Pokhara, Kaski
5	Lumbini	2019	Temporary	Rupandehi, Butwal
6	Karnali	2017	Permanent	Birendranagar, Surkhet
7	Sudurpaschim	2017	Permanent	Rajapur, Doti

Table 1 : Status of National HEOC and Provincial HEOCs network

Provincial HEOC coordinates with Provincial EOCs, health sector and external development partners, hub and satellite hospital networks, provincial hospitals, medical colleges, district hospitals and primary hospitals to maintain the coordination and collect information for timely response to any disaster caused by a variety of hazards - biological, climatological, geological and man-made. The current status of establishment and the location of provincial HEOCs with the support of WHO is shown in Table 1. Five of the seven PHEOCs are permanent with the structural component of only the PHEOC of Bagmati Province being constructed by the respective Provincial government.

2010
- Establishment of National Emergency Operation Center, Ministry of Home Affairs

2012
- Health Emergency Operation Center Conceptualized

2018
- Establishment of PHEOC, Gandaki
- PHEOC SoP
- Establishment of PHEOC, Province 2
- New Structure in Federal Context: HEDMU/HEOC
- First National Conference on Pre-Hospital Care for Emergencies in Nepal
- First National Conference on Post-Hospital Care for Emergencies in Nepal

2019
- Stakeholder Mapping of Prehospital Care Service Enablers and Providers in Nepal
- National HEOCs' SoP 2018 developed
- Standardization of Training Program for Health Sector Emergency Preparedness and Response Plan Community, Pre-Hospital, Hospital, Post-Hospital and Response Plan
- Learning Resource Package Development for Health Emergencies and Disaster Management in Nepal
- Disaster Response Exercise and Exchange Simulation

TIMELINE

Fig 6 : Timeline of Establishment of HEOC Network

2014
- **Health Emergency Operation Center Established**
- **Hub and Satellite Hospital Network Established**
- Health Sector DRR Intervention of MoHP with WHO Support Initiated
- Structural, Non-structural and Functional Aaspects of Hospital safety Addressed
- Multi-hazard Resistant Fail-set emergency medical logistics warehouse established
- Hospital Disaster Preparedness and Response Plan
- Health Safety Index Covering 10/25 hubhospital networks
- Hospital Preparedness Emergency Training Started

2017
- **Establishment of PHEOC, Karnali**
- **Establishment of PHEOC, Sudurpaschim**

2015
- **Commanding Center for Earthquake 2015**
- **Health Emergency Operation Center, SoP Endorsed**
- **HEOC Incident Command System (ICS) endorsed**

2020
- **Establishment of PHEOC, Province 1**
- **Establishment of PHEOC, Bagmati**
- **Establishment of PHEOC, Lumbini**
- Integrated Ambulance and Prehospital Service Guideline 2020 endorsed
- Adopted WHO Emergency Care System Framework
- Health Emergency Hotline "1133" Activited

2021
- Review Workshop of HEOC and PHEOCs
- WHO-GoN Emergency Care System Strengthening Project Phase 1 endorsed
- WHO Global Emergency and Trauma Care Initiative Tools
- Mortuary Van Service and Management Guideline 2021
- Telemedicine Center at Federal and Provincial Level Established
- Emergency Medical Deployment Team Trained

ROLE OF HEOC IN PREPAREDNESS AND RESPONSE READINESS

Health sector emergency preparedness and response readiness is one of the key priorities of MoHP given the vulnerability of the country to different hazards. HEOC acted as the center to organize and manage the resources and responsibilities to deal with disasters and health emergencies. HEOC coordinated and facilitated different activities that prepared the country and made it ready to respond to health emergencies and disasters.

Hub and Satellite Hospital Networks expansion and strengthening

Prior to Nepal Earthquake, 2015 Nepal faced different disasters like monsoon floods, landslides and RTAs, response to which provided lessons on the importance of hospital preparedness during disaster response. Moreover, perception of high vulnerability of Nepal and Kathmandu valley to earthquakes led to multi sectoral disaster risk reduction interventions through a consortium approach.

Both hospital and district level health contingency plans were envisioned, and necessary activities were conducted to capacitate hospitals and district health offices for health-related emergency preparedness and response. However, after federalization the role of the district health offices were reduced and thereby the major focus for health sector preparedness shifted to hospitals as the key pillars. Thus, area specific Hub and Satellite hospital networks were designated across the country to enable strategic and structured sharing of available resources and capacities.

The then zonal, sub-regional, regional and central hospitals that were equipped with tertiary or referral facilities were designated as hub hospitals. A total of 25 hub hospitals were spread throughout the country (Annex 3), each coordinating with satellite/ associate hospitals within their defined catchment areas focusing majorly on managing mass casualties due to injuries from accidents and earthquakes. The six hub hospitals within Kathmandu valley and four hub hospitals outside the valley were supported by WHO in undertaking various preparedness and readiness initiatives which included seismic assessments, non-structural mitigation and functional preparedness, and creation of emergency medical logistics warehouses. These interventions were mainly supported through grants from DG-ECHO to WHO.

In order to strengthen partnership and communication between hospitals during emergencies, a hub and satellite network of hospitals as a functional referral system with a one-door communication system was essential to not only ensure timely response but also facilitate access to financial resources from the Prime Minister's Disaster Relief Fund through the Ministry of Home Affairs (MoHA).

The 2015 earthquake exposed quite a few fault lines within the health sector in Nepal, including the tenuous coordination between hospitals. Although different readiness mechanisms had been put in place, the planning and available facilities at these institutions were nowhere close to the state of readiness they should have been to respond to a disaster of this magnitude. Proceeding with the strategy, a standard hospital disaster management plan was developed and validated with governmental and non-governmental agencies. It incorporated measures to improve communication and coordination between hub and satellite hospitals and the MoHP through resource sharing, capacity analysis and the development of deployment teams in each hub and satellite hospital network. Communication and coordination between hub and satellite hospitals have vastly improved, as have future response and disaster preparedness. The hub hospital network concept has thus turned out to be one of the most successful public-private partnership models undertaken by the MoHP albeit in an informal manner.

HUB AND SATELLITE HOSPITAL CONCEPT [NEEDS]

- Develop Partnership
- Strengthen Coordination
- Develop Consolidated Plan & Preparedness
- Map, Use & Exchange of resources
- Capacity Building & Awareness
- Apply One Door Communication System
- Manage Referral System
- Form Rapid Response Team & Early Deployment
- Make Effective health care services to any Disaster/ Emergency situation
- This is one of the best Public Private Partnership (PPP) model in MoHP
- Easy to coordinate and communicate during emergencies
- Maximizing in-country resources for response
- Timely and effective early deployment (surge support)
- Easy to access the financial resources from PM Disaster Response Fund through Ministry of Home Affairs (MoHA)
- 25 hub hospitals throughout the country

Role of Hub Hospitals

Pre-Disaster

- Establish coordination and communication with HEOC
- Establish network with Satellite hospitals and GoN health offices (Health Directorates, Health Offices etc)
- Pre-assessment of hospitals (structural, non-structural, functional, referral network, etc.)

  Resource mapping of satellite hospitals and updating the HEOC
  - Health Personnel and Human Resources
  - Logistics
  - Surge Capacity
- Facilitate training and orientation to Satellite hospitals
- Formation of Emergency Medical Deployment Team (EMDT) all individual hospitals within the hub hospital zone
- Establish and orient early deployment mechanism
- Plan for field hospitals
- Develop consolidated disaster response plan with Satellite hospitals

During Disaster

- Immediate Response, Preparedness
- Communicate with HEOC/PHEOCs, Satellite Hospitals
- Activation of Hospital ICS
- Follow SoP, Guidelines, Planning Templates
- Team Mobilization

Post-Disaster

- Update to HEOC with situation report
- Communication and coordination with Satellite hospitals
- Situation (damage) report of Satellite hospitals
- Health response as per the preparedness plan
- Manage and Exchange of resources between Sub Hub and Satellite hospitals
- Request HEOC for additional support (Human
- Resources, Logistics and Financial) and facilitation as needed
- Deploy Emergency Medical Deployment Team as needed
- Establish field hospital as per need

Role of Satellite Hospitals

- Establish coordination and communication with Hub Hospitals

- Establish network (Contact person) with Hub hospitals and other government health offices

- Pre-assessment of individual hospitals (structural, non-structural, functional, human resources, etc.)

- Plan for field hospitals

- Provide updates to Hub hospital of roster of all human resources available

- Establish and orient emergency deployment mechanism within the hospital

- Develop consolidated disaster response plan with Hub hospitals

Pre-Disaster

Post-Disaster

During Disaster

- Establish communication with Hub hospitals
- Update to Hub Hospital with situation report
  Report the assessment of the hospitals
- Health response and Emergency care as per the preparedness plan
- Exchange of resources between Hub and Satellite hospitals
- Request additional support and facilitation with Hub Hospital as needed

- Immediate Response, Preparedness
- Communicate with Hub Hospital
- Activation of Hospital ICS
- Follow SoP, Guidelines, Planning Templates
- Team Mobilization

Checklist for proper functioning Hub and Satellite Hospitals Network

PLAN, POLICIES AND STANDARDS

- Hospital Emergency/Disaster Plan (Emergency Communication/Coordination/Resource Sharing Plans)
- Mass Casualty Management Plan
- Infectious Hazard Management Plan
- Early Deployment Plan
- Standard Operating Procedures

PREPAREDNESS

- Regular update meeting with N/PHEOCs, Hub and Satellite hospitals network
- Up-to-date Hospital Resource Mapping
- Capacity building exercises (Drill, simulation, TTx)
- Stockpiling of emergency medical supplies
- Emergency Medical Deployment Team (2)
- Pre-designed focal point(s)

RESPONSE

- Activate HICS immediately following emergency
- Coordination with national and subnational line ministries, partners guided from plan, policies and standards

Strengthening of Hub and Satellite Hospitals network

Understanding the need and importance of Hub and Satellite Hospitals Network during disaster and emergencies, overall strengthening (Structural, Non-structural, Functional, Human Resources etc.) of these networks was planned. However, at the initial phase, assessing the status of the hospitals was required to identify further strengthening activities.

Structural assessment using a harmonized national tool including access barriers for disabled persons and retrofitting of key hospitals was done in collaboration of WHO and other developmental partners. Non-structural assessment was also conducted with implementation of mitigation measures. Assessment of buildings, maintenance of non-structural components, updating the disaster store, prepositioning of emergency medical logistics including Environment-Water Sanitation and Hygiene logistics, priority assistive devices for rehabilitation, etc. were done following the structural and non-structural assessment.

Functional assessment conducted identified need for Hospital Disaster Preparedness and Response Plans (HDPRP) (Annex 4); Hospital Incident Command System; Emergency Medical Logistics Warehouses with stockpiles, HDPRP and Hospital Preparedness for Emergency (HOPE) (Annex 5) ; Basic Life Support; Advanced Life Support and Emergency Trauma Care Trainings. The assessments were conducted using the WHO Hospital Safety Index (HSI) tool with the technical assistance of an expert institution GeoHazards International. This WHO HSI tool was harmonized with the structural assessment tool used by DUDBC for the development of a single national tool which was tested and standardized.

Structural Retrofitting

Pre-positioning of WASH Items

In addition, a Hospital Safety Index Plus (HSI+) web application was developed, piloted and standardized in collaboration with WHO country and regional offices which helped in electronic capturing and presentation of hospital information along with preparation of digital version of hospital disaster preparedness and response plan for easy updates and monitoring. The findings will also help the decision makers to prioritize, finance and

Hospital Safety Index Plus (HSI+) web application
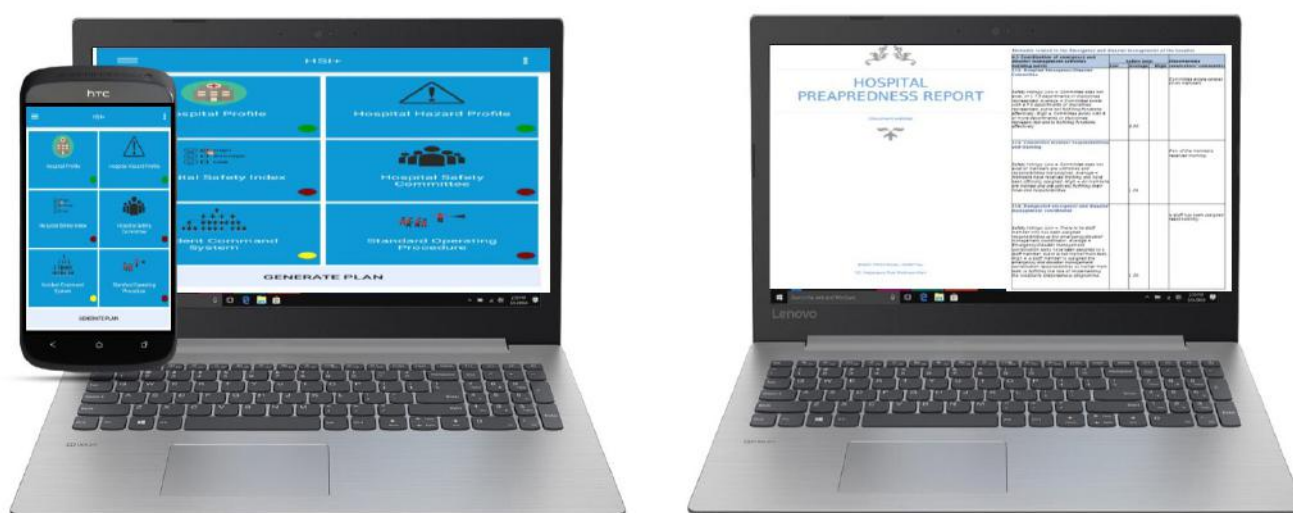
Along with infrastructural assessment, hospital specific plans for disaster response were also developed as hazards cannot be modified or changed and the entire infrastructure of the country was not possible to be assessed/ upgraded. So, to have a disaster management plan was highly important to decrease morbidity and mortality. For the plan to operate smoothly, it was very important that every hospital worked in a coordinated way during response which was possible only with hospital specific plans that interlinked with each other and with the national system. Three hospital specific plans for disaster response namely HDPRP, Mass Casualty Management (MCM) Plan and Infectious Hazards Contingency Plan

were developed through many expert guided workshops organized by MoHP and supported by WHO. WHO worked with its consortium partners such as Save the Children, MERLIN, OXFAM, Danish Red Cross Society, and Humanity and Inclusion to support the MoHP in strengthening various components of Hospital Safety, Pre-Hospital and Post-Hospital care. Moreover, HEDMU/HEOC also conducted an Assessment on Emergency Care System in Nepal with the technical support of WHO Geneva and WHO Country Office Nepal that identified 39 action priorities for strengthening of the emergency care system in Nepal (Annex 6).

Emergency Medical Deployment Teams (EMDTs)

EMDTs are groups of health professionals (doctors, nurses, paramedics etc.) that treat patients affected by an emergency or disaster. EMDT consists of health professionals from both hub and satellite hospitals who are on standby for deployment if needed.

Composition of EMDT for Mass Casulty Management	Composition of EMDT for Infectious Disease Management (for COVID-19)
1. Orthopedic Surgeon - 1 2. Doctor of Medicine in General Practice and Emergency Medicine - 1 3. Medical Officer** - 1 4. Nurse trained for Operation Theatre - 1 5. Nurse trained in Emergency care- 1 6. Health Assistant - 1	1. Physician (Junior consultant or above) - 1 2. Doctor (MD resident or above) - 1 3. Nurses or health assistants - 6 4. Attendant- 3

EMDT in hub hospitals *

***If not available in hub hospital, can be from satellite hospitals**
****Medical officer can be replaced by an Anesthetist**

EMDT Backpack for Health Professionals

Stockpiling of emergency medical logistics

In order to prepare for the better response, MoHP planned the prepositioning of medical logistics in each of the hub hospitals. WHO supported Hub hospital preparedness initiatives in the Kathmandu valley covering 6 Hub hospitals in Kathmandu Valley (Tribhuvan University Teaching Hospital, Civil Service Hospital, National Academy of Medical Sciences/ Bir Hospital, Shree Birendra Hospital, Patan Academy of Health Sciences and Bhaktapur Hospital) and 4 hospitals outside Kathmandu valley (Dadeldhura Hospital, Seti Hospital, Rapti Provincial Hospital and Bheri Hospital).

The fail-safe shipping container-based emergency medical logistics warehouses established at Kathmandu valley were handed over at a function organized in Shree Birendra Hub Hospital on 29 March 2017. The four Emergency Medical Logistics warehouses outside the valley were established in 2019.

#	Hub Hospital	Province/City	Remarks
1	Humanitarian Staging Area (TIA)	Kathmandu	WHO Property
2	WHO, Country Office for Nepal	Kathmandu	
3	WHO, Country Office for Nepal	Bagmati	WHO Support
4	Tribhuvan University Teaching Hospital	Bagmati	
5	Bir Hospital	Bagmati	
6	Shree Birendra Hospital	Bagmati	
7	Patan Academy of Health Sciences	Bagmati	
8	Civil Services Hospital	Bagmati	
9	Dadeldhura Hospital	Sudurpaschim	
10	Seti Hospital, Dhangadi	Sudurpaschim	
11	Rapti Provincial Hospital	Lumbini	
12	Bheri Hospital	Lumbini	

Table 3: Prepositioning of emergency medicines and logistics

Warehouse for emergency stockpiling of medicines and logistics

Capacity Building Activities

In order to update, capacitate and upgrade all the relevant stakeholders of health sector emergency preparedness and response, HEOC conducted different conferences, orientations, training, workshops and exercises in coordination with WHO and other health partners. The major capacity building activities conducted were:

I. HANDOVER FUNCTION OF PHEOC, GANDAKI AND TRAINING/ WORKSHOP ON HEOCS, 6-8 FEBRUARY 2018

The workshop following handover of Provincial HEOC of Gandaki Province jointly by HEOC/ MoHP and WHO helped sensitize Government authorities and partners on roles and functions of HEOCs network and develop a SoP for PHEOCs.

2. EMERGENCY RESPONSE SIMULATION COVERING ALL HUB HOSPITALS OF KATHMANDU VALLEY, HOT WASH OF SIMULATION AND HUB HOSPITALS COORDINATION/ ORIENTATION MEETING [SIMULATION: 10-11 MAY, COORDINATION MEETING : 15 MAY 2018]

A simulation exercise involving multi sectoral stakeholders for disaster management within Kathmandu valley was conducted on 10-11 May 2018 to orient and sensitize participants on HEOC coordination system, hub and satellite network system in responding to a mass casualty incident such as an air crash.

Moreover, HEDMU, Karnali Academy of Health Sciences and WHO conducted simulation exercises at the Bheri Zonal Hospital in Province 5 on 11 February 2019 and at the Seti Zonal Hospital in Sudurpashchim Province on 12 February 2019. These simulations helped in developing and updating disaster management plans at the two participating hospitals, as well as defining the roles and responsibilities of hospital units and the PHEOCs for greater efficiency during disasters.

Coordination meeting following the simulation exercise oriented and prepared hub and satellite hospitals network for cold debriefing and continuation of such meetings going forward.

3. TENT SIMULATION EXERCISE AT HUB HOSPITAL AS A PART OF EFFECTIVE USE O F EMERGENCY MEDICAL LOGISTIC STOCKPILES, 8 JUNE 2018

This simulation exercise was conducted to enable the effective utilization of Emergency Medical Logistic Stockpiles at the hub hospitals with support of WHO to capacitate health workers from all six hub hospitals of Kathmandu valley to install emergency tents for service provision and business continuity in the event of collapse/ non-functionality of the hospital buildings.

4. FIRST NATIONAL CONFERENCE ON PRE – HOSPITAL CARE FOR EMERGENCIES IN NEPAL, 19-20 JULY 2018

The first national conference on pre-hospital care for emergencies in Nepal sensitized stakeholders on the need for optimal and standardized prehospital care for emergencies in the country along with the endorsement of a 11 points declaration for strengthening pre-hospital care in the country. This was jointly organized with Nepal Ambulance Service and WHO.

PRE- HOSPITAL CARE CONFERENCE DECLARATION

1. Every citizen should be able to access quality pre-hospital care.

2. All the existing ambulances should be upgraded and integrated into the national networking system with GPS.

3. All the ambulances should be accessible through a common toll free three-digit number.

4. A national body to provide leadership for pre-hospital care at national level and provincial bodies to provide leadership at local level.

5. Funding for pre-hospital care should be borne by the insurance policy and the deficit be covered by the state.

6. State should provide provision of air ambulances for remote areas.

7. A common protocol should be developed for all EMTs in consensus with all stake holders.

8. Standard national EMT curriculum should be developed and accredited.

9. Introductory EMT curriculum should be incorporated in all nursing and paramedical curriculum.

10. Monitoring and evaluation should be done at central and provincial level as a continuous process.

11. A national guideline should be set up for monitoring and evaluation.

5. NATIONAL CONFERENCE ON POST-HOSPITAL CARE FOR EMERGENCIES IN NEPAL, 25-26 OCTOBER 2018

This conference brought together MoHP, Government of Nepal and its partner agencies who have been working on health sector emergency preparedness, response and recovery actions with or without assistance from DG-ECHO to share evidence from their past and ongoing post hospital care activities to share information on current innovations and practices. This was organized with the support of WHO consortium for strengthening Health Sector Emergency Preparedness and Response Readiness (WHO, Danish Red Cross and Humanity and Inclusion). A 14-points declaration was endorsed on post-hospital care strengthening for emergencies in Nepal.

POST-HOSPITAL CARE CONFERENCE DECLARATION

1. Ensure and roll out act, rules and regulations, policy, strategy, guidelines, SOP, structure and action plan at all level of governments including private sector with clear roles and responsibilities.

2. Plan post hospital initiatives at federal, provincial and local level and implement rehabilitation services including mental health and palliative care in health system with emergencies and long-term follow-up in line with national and international commitments and incorporate disaster management plan while establishing and upgrading health facilities

3. Identify and deploy essential human resources for emergencies health and rehabilitation considering new federal context.

4. Ensure rehabilitation including mental health professionals in medical team in emergencies.

5. Identify and link step-down facility in hub hospitals for continuum care of patients including referral pathway from hospitals to community.

6. Strengthen and link rehabilitation, mental health/PSS/palliative service in health system including barrier free access to information and services.

7. Establishment of trauma wing in federal, provincial and local level.

8. Allocate fund for basic rehab service package, including essential list of assistive products and resources for the identified actions related to post hospital initiative.

9. Emergency funds should be utilized for post hospital care.

10. Exempt Tax for assistive products and technologies adhering with national medicine list.

11. Improve provision of assistive products by increasing the availability of human resource, manufactures/ suppliers/ through in county and cross -country collaboration.

12. Increase in stock piling of emergency logistics to address the needs of injured as well aspre-existing people with disability during emergency.

13. Incorporate disability and emergency related functioning questionnaire on Nepal demographic health survey and census and integrate injury/disability data in HMIS including International Classification of Diseases code (Incorporate International Classification of Functioning, Disability and Health).

14. Promote action research related to post hospital care for evidence-based policy.

6. WORKSHOP ON STANDARDIZATION OF TRAINING PROGRAM FOR HEALTH SECTOR EMERGENCY PREPAREDNESS AND DISASTER RESPONSE PLAN – COMMUNITY, PRE-HOSPITAL, HOSPITAL, POST-HOSPITAL CARE, 12-14 JANUARY 2019

The workshop was conducted for standardizing the training strategy and package for Emergency Preparedness and Response in federal context with support from WHO and Nepal Red Cross Society. Key components of the capacities required were identified and a Learning Resource Package was conceptualized and has been drafted subsequently for endorsement. Once endorsed it would be institutionalized for delivery through the National Health Training Center and its partners facilitated by the HEOC.

7. HANDS-ON TRAINING AND WORKSHOP ON HOSPITAL SAFETY ASSESSMENT USING WHO HOSPITAL SAFETY INDEX, DUDBC STRUCTURED SAFETY ASSESSMENT AND OTHER TOOLS, 23-25 JANUARY 2019

Two days training followed by one day workshop on Hospital Safety Assessment (HSA) using WHO Hospital Safety Index, DUDBC Structural Safety Assessment and other tools was conducted by HEDMU/HEOC along with the Department of Urban Development and Building Construction (DUDBC) with support from WHO and Geo Hazards International.

This training and workshop capacitated engineers from DUDBC, Nepal Engineering Association (NEA) for structural, non-structural and functional assessment of hospitals (Seti Zonal Hospital and Dadeldhura Sub-Regional Hospital in Sudurpashchim Province, and the Bheri Zonal Hospital and Rapti Sub-Regional Hospital in Province 5) and further envisioned formation of a national HSA team to carry out training sessions in all provinces with provincial teams being activated for HSA in every hospital of the country. The different tools were brought together, strengths and gaps assessed through consultation between national and international experts and a single national tool was drafted and tested before finalization.

For the first time sections for assessing access barriers to disabled persons (physical, information and service related aspects) were added to the tool in consultation with disabled persons themselves, who also participated in the assessment at the mentioned hospitals through the engagement of the National Federation of Disabled Persons Network and associated Non-Governmental Organizations. The tried and tested tool needs to be formally endorsed.

8. LEARNING RESOURCE PACKAGE DEVELOPMENT FOR HEALTH EMERGENCIES AND DISASTER MANAGEMENT IN NEPAL [WORKSHOP: 25-26 AUGUST 2019; TRAINING 27-29 AUGUST 2019]
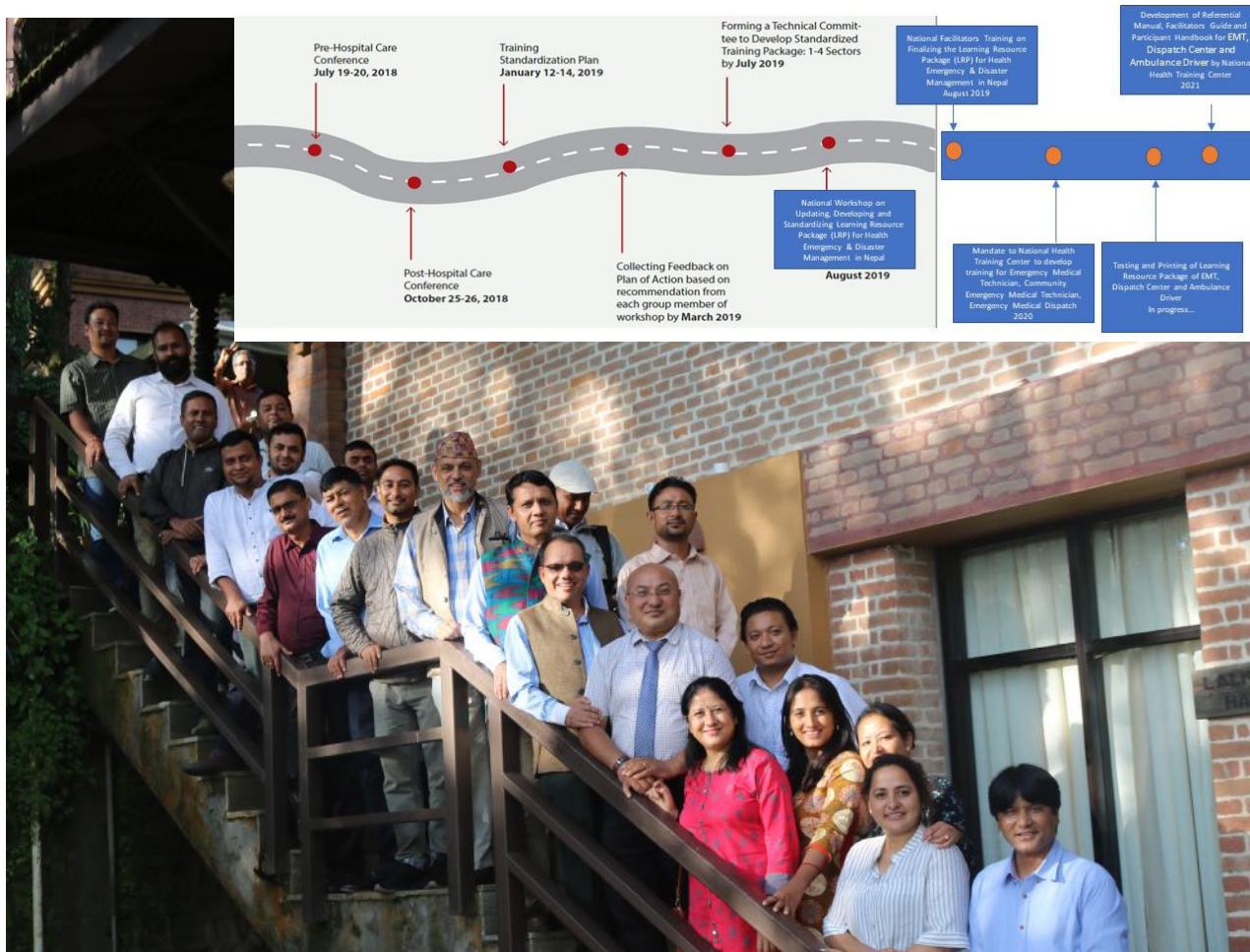
The workshop and training as a continuation of "Standardization of Training Program for Health Sector Emergency Preparedness and Disaster Response Plan - Community, Pre- hospital, Hospital, Post-Hospital care, 12-14 January 2019" workshop standardized the integrated national training package on health emergency and disaster management. Out of 63 existing or earlier trainings that were collated, 15 identified, updated and standardized and grouped under community care, pre-hospital care, hospital care and post-hospital care for systematic development and delivery through sustainable institutional mechanisms going forward.

9. DEMONSTRATION CUM HANDS-ON TRAINING AND WORKSHOP ON USE OF HOSPITAL SAFETY INDEX PLUS (HSI+) MOBILE AND WEB APPLICATION, 12-13 NOVEMBER 2019

The mobile and web-based Hospital Safety Index plus (HSI+) application allows digitization of the findings of the HSI assessment and the additional information needed for the generation of an electronic versions of the HDPRP. Orientation and hands-on training on the use of the app was provided to the disaster focal points and medical records personnel from hub hospitals to enable them to help develop the hospital disaster preparedness and response plan through the app. 25 Hub hospitals participated in the training and were able to generate their HDPR Plans.

10. STAKEHOLDER CONSULTATION ON DEVELOPING CONSENSUS-BASED ACTION PRIORITIES FROM THE RESULTS OF THE EMERGENCY CARE SYSTEM ASSESSMENT SURVEY IN NEPAL, 10-11 DECEMBER 2019

The consultation was conducted to discuss and deliberate on the key findings from the assessment, and 39 action priorities (Annex 4) were agreed which provide the base for the WHO-GoN Emergency Care System Strengthening Project - Phase 1 that is to be initiated in March 2021 jointly by MoHP and WHO through the facilitation of the HEOC.

11. HEOC-PHEOCS NETWORK EXPANSION AND STRENGTHENING WORKSHOP AT CHITWAN, 21-22 JANUARY 2021

Subsequent to the establishment of permanent or temporary HEOCs in all provinces, this workshop aimed to sensitize and orient participants from Provinces (MoSDs, HDs and PHEOCs) on SoP and ToR of HEOC and PHEOCs.

12. WORKSHOP MEETING FOR SOPS DEVELOPMENT OF HEOC, PHEOCS AND NEMDT, 24 FEBRUARY 2021

This workshop focused mainly on sensitizing participants about SoPs of HEOC and PHEOCs that was endorsed by HEOC with the support of WHO. WHO and Humanity and Inclusion (HI) are working forward on updating these SoPs in the federal context for their final endorsement.

13. EMDT ORIENTATION MEETING, FIRST PHASE: 4-5 MARCH 2021 AND SECOND PHASE: 24 FEBRUARY 2021

EMDT members from all hub and satellite hospitals network were oriented on roles andfunctions of HEOC – PEHOCs – Hub – Satellite hospital network and EMDTs duringdisaster, with specific sensitization on COVID-19 case management.

Information Management

HEOC is currently working on the development of "uniform information management system including data file, folder and data structure" for all HEOCs.

COLLECTION

- 3W/4W tools are developed and shared among partners for preparedness and response for any emergencies.
- Reporting Forms are developed for any incidents:
- Daily Zero Reporting and Incident Reporting

STORAGE

- Information is stored inHEOC Server and common cloud server.
- Back-up scheduled regularly on monthly basis

EXCHANGE

- PHEOCs have access to their respective database in thecommon cloud server.
- Sharing of information among PHEOCs through weekly Video Conference.
- HEOC Web Portal (*http://heoc.mohp.gov.np*) is available with regular updates.

Fig 7 : Information Management at HEOC

HEOC also developed different reporting tools, forms and formats for recording and overall reporting of incident, disaster and emergencies. The reporting also included "Zero Reporting" which further improved the coordination between HEOC and PHEOCs.

Government of Nepal
Ministry of Health and Population
Health Emergency and Disaster Management Unit (HEDMU)/ Health Emergency Operation Centers (HEOCs) [NAME]
Record - Response Incidents/Disaster
Year

	IDENTIFYING INFORMATION							DESCRIPTION OF THE INCIDENT				SOURCE OF THE INFORMATION					ACTION TAKEN AND COMMENTS		
S.N.	Province (Please select)	District (Please select)	Local Governance (Please select)	Ward No.	Community / Village	Date of Incident	Time of Incident	Incident Identifying Title	Give detailed account (Who, What, When, Where, Why and How)	Death #	Injured #	Missing #	Focal Person	Contact Number	E-mail	Follow-up required ?	Source	Response from P/HEOC	Immediate action needed / Needs	Remarks

Fig 8: Incident Reporting Form

Government of Nepal
Ministry of Health and Population
Health Emergency and Disaster Management Unit (HEDMU)/ Health Emergency Operation Centers (HEOCs) [NAME]
ZERO REPORTING FORM
Year

S.N	EN-Date (dd-mm-yy)	NP-Date (dd-mm-yy)	Province	PHEOCs	Message Body	E-mail Group	Information provided by (Name)	Remarks

Fig 9: Zero Reporting Form

Cluster activation, Partners and Coordination

HEOC has been entitled to act as secretariat of MoHP during health and nutrition cluster activation at the time of emergencies. HEOC coordinates with different line ministers, stakeholders, hub and satellite hospital networks, PHEOCs, key health partners and EDPs (Annex 7) for coordinated response activities. HEOC also maintains 3Ws (Who, What, Where) and 4Ws (Who, What, Where, When) matrices to minimize gaps and overlaps during humanitarian/ emergency response.

After initiation of health and/or nutrition clusters, through the cluster approach, HEOC helps in inclusion of key humanitarian partners, establishing and maintaining appropriate humanitarian coordination mechanisms, coordinating with national and local authorities and other stakeholders, and practicing participatory and community-based approaches. Advocacy, along with needs assessment and analyses, are also prioritized through coordination.
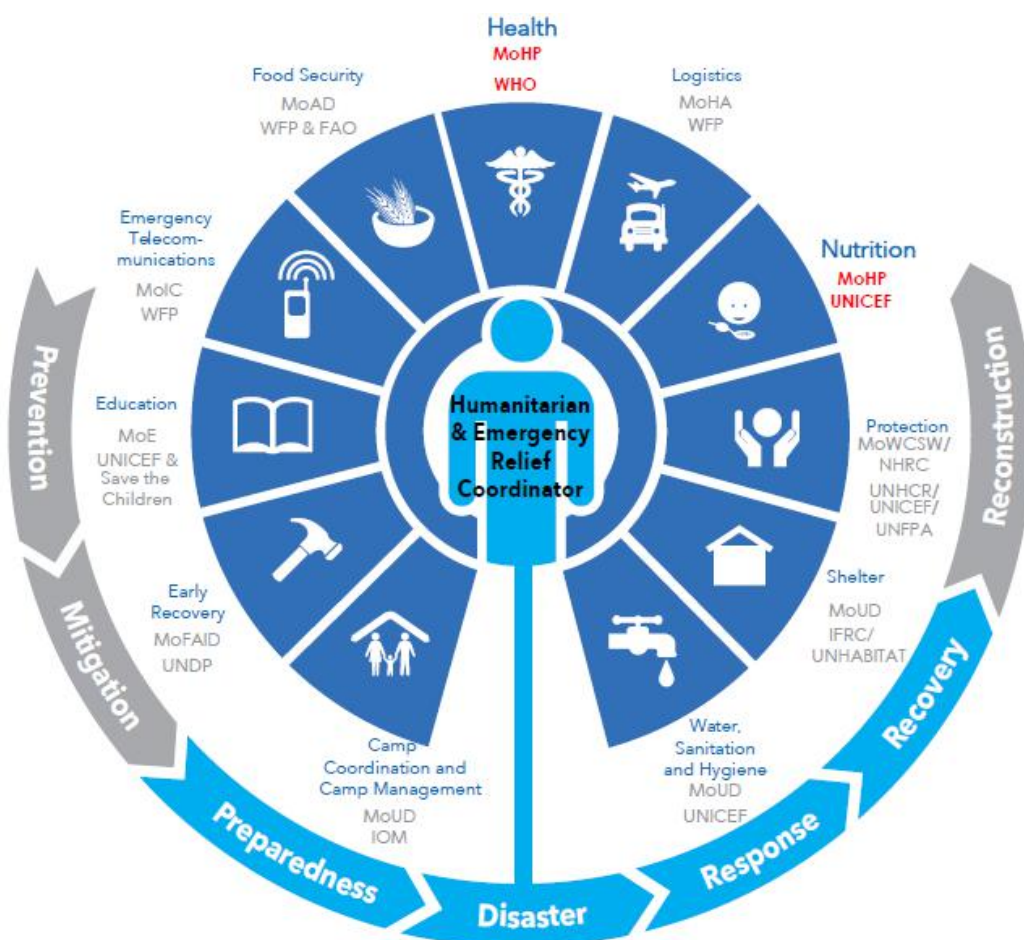
Fig 8: Cluster Leads and Co-Leads

Hub and Satellite Hospital Coordination

Hotline Numbers

HEOC as a coordination, communication and command center for overall health emergency and disaster preparedness and response is highly dependent on using all the communication means available. It established a hotline "16600133444" during Nepal Earthquake 2015 and Floods and Landslides 2017 and "1133" during COVID-19 besides other means of available communication for effective two-way communication between the MoHP and various stakeholders including health personnel and the public.

HEOC'S ROLE IN RESPONSE TO EMERGENCIES

Following any incident/ disaster due to a public health emergency, the HEOC gets activated immediately once a decision to that effect is made by the senior leadership of the MoHP. This in turn may activate health clusters to support the disaster response mechanism through the coordination and function of the HEOC. The HEOC became the nerve center for coordination of the health sector response to the Nepal Earthquake 2015, Floods and Landslide 2017, Kavre, Panchkhal Food Poisoning Case 2018, US Bangla Air Crash 2018, Bara-Parsa Windstorm 2019, Dengue Outbreak 2019 and the ongoing COVID-19 pandemic.

General Response during all disasters

During all health emergencies and disasters, HEOC majorly focused on coordination and information management. The coordination was internal (between different committees, teams, etc. formed within the MoHP and different government health stakeholders), inter-ministerial (between committees, teams, etc. of different ministries and the NEOC and provinces) and/ or with partners (health and nutrition cluster and its sub-clusters) as per the requirement. In addition, information from different channels using various tools were collected in order to publish daily situation updates and/ or reports, facilitate media briefs and/or press releases, update and maintain web portals along with maintaining information repository. Moreover, vertical and horizontal coordination of information as per the requirement was done as highlighted in the figure.
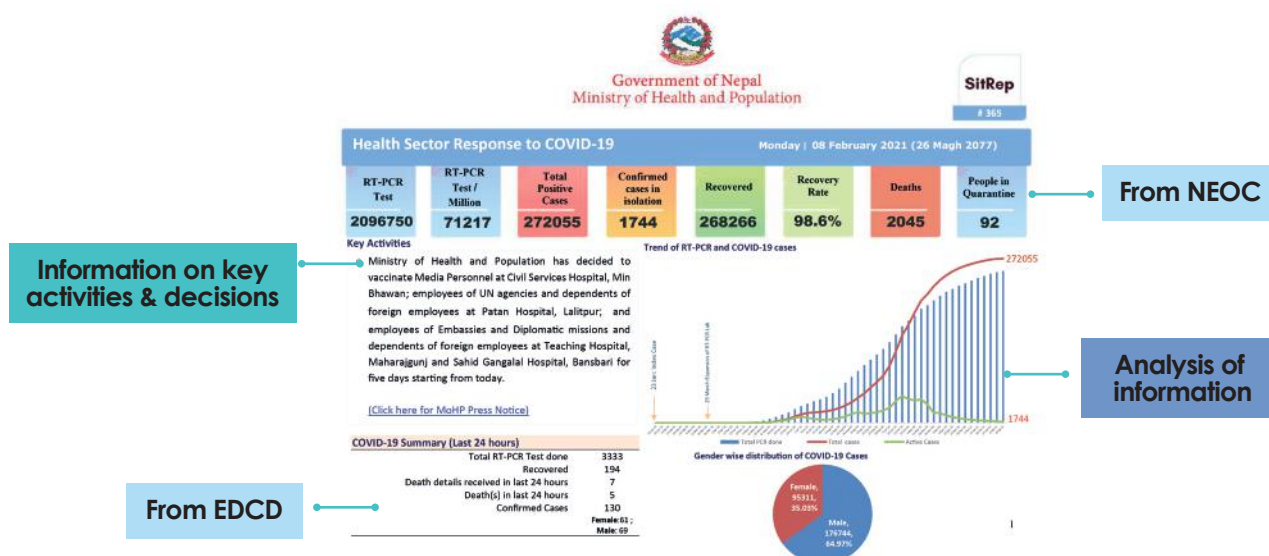
Nepal Earthquake 2015
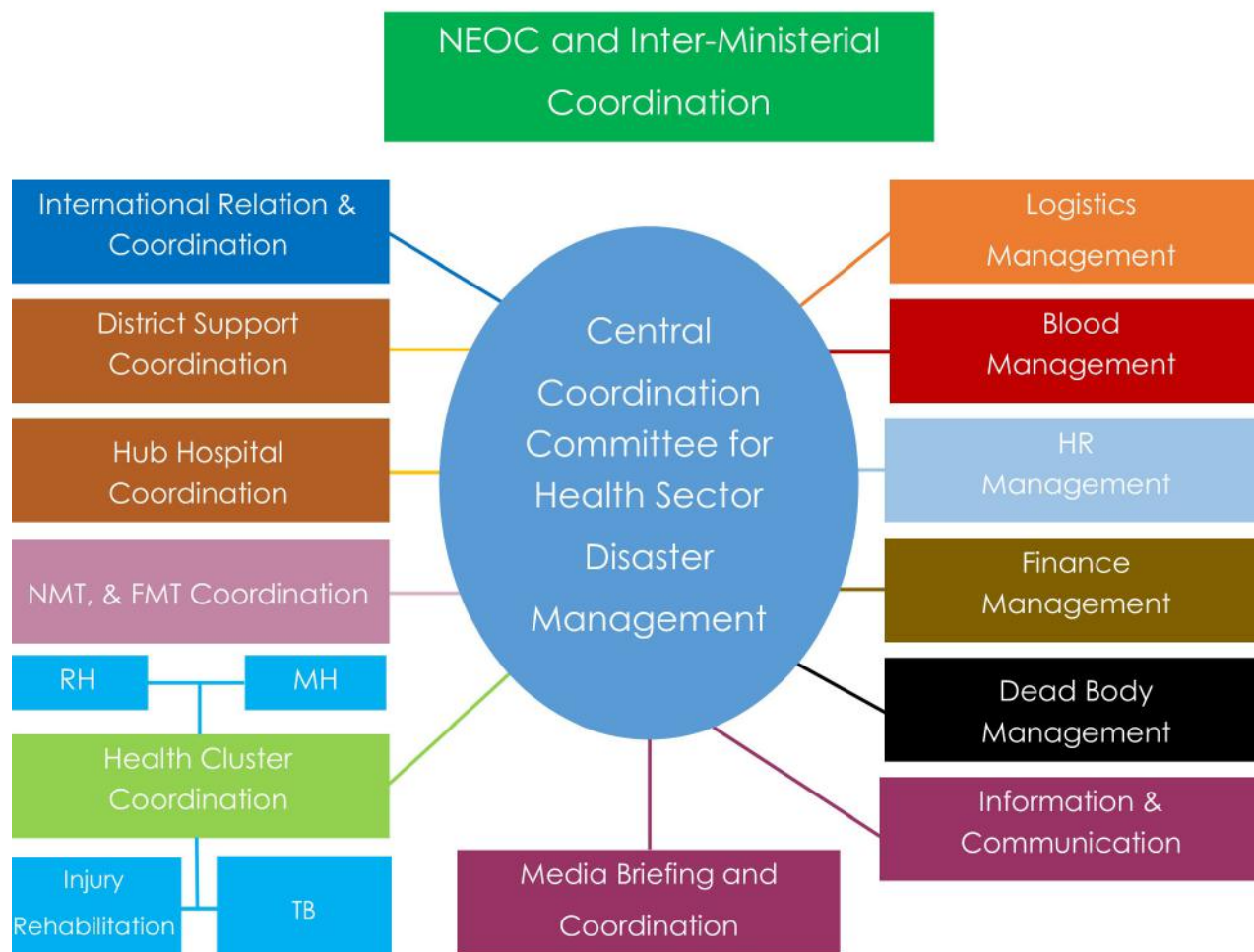
Fig 10: Role of HEOC as central coordinating and commanding unit

HEOC activated immediately after the earthquake struck and quickly communicated with the affected district to assess the situation on the ground and prioritize the required interventions. A public notice was also issued instructing health personnel to work from where they were and to support in response. Following this, different pre-designated hub hospitals that were mandated to respond to emergencies were also activated for response. HEOC coordinated in connecting these hub hospitals with MoHP for logistics and other required support. Different readiness measures like management of information, logistics, human resources, disease surveillance, blood supply, etc. that HEOC had adopted prior to disaster enabled it to steer the response mechanism from the center. Moreover, HEOC contributed in deployment of International Emergency Medical Teams (I-EMT) as per the requirements at the ground level.

Floods and Landslides 2017

Heavy rainfall that started from 11 August 2017 has resulted in Flood and Landslide affecting 36 districts.

12 August 2017
28 Shrawan 074

- Emergency Meeting of high dignitaries from MoH and DoHS.

13 August 2017
29 Shrawan 074

- HEOC Technical Committee Meeting.
- Press Meet.
- Disaster Management Meeting

14 August 2017
30 Shrawan 074

- Disaster Management Meeting.
- HEOC Advisory Committee Meeting
- First Health Cluster Meeting.

15 August 2017
31 Shrawan 074

- HEOC Technical Committee Meeting.
- Health Cluster Meeting.

19 August 2017
03 Bhadra 074

- Disaster Management Meeting.

18 August 2017
02 Bhadra 074

- Disaster Management Meeting.
- Health Sector response to flood and landslide.

17 August 2017
01 Bhadra 074

- Health Sector response to flood and landslide.
- Health Cluster Meeting.
- Flood and Landslide response meeting with trade unions.

16 August 2017
32 Shrawan 074

- Disaster Management Meeting.
- NHEICC Press Meet.

20 August 2017
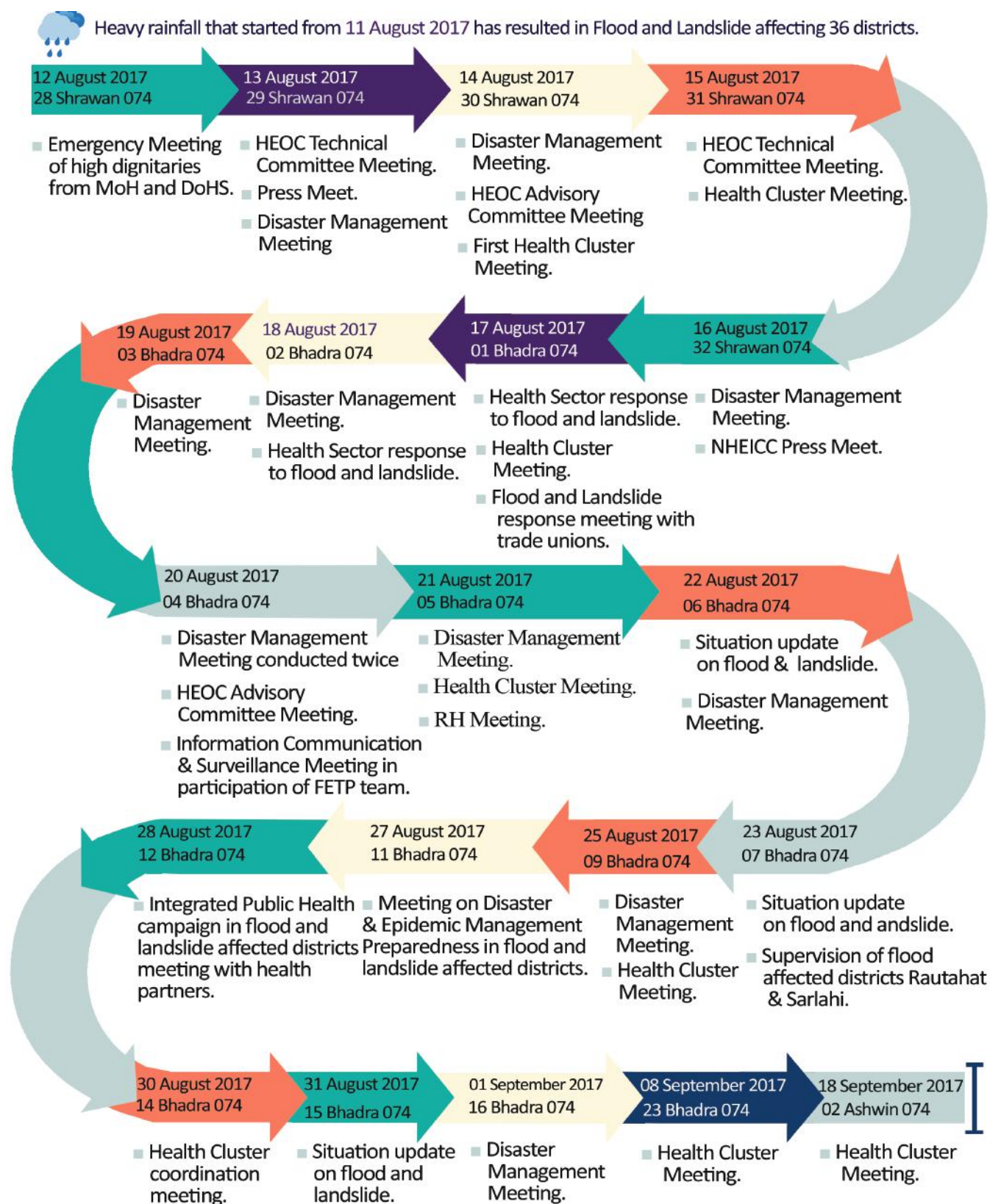**04 Bhadra 074**

- Disaster Management Meeting conducted twice
- HEOC Advisory Committee Meeting.
- Information Communication & Surveillance Meeting in participation of FETP team.

21 August 2017
05 Bhadra 074

- Disaster Management Meeting.
- Health Cluster Meeting.
- RH Meeting.

22 August 2017
06 Bhadra 074

- Situation update on flood & landslide.
- Disaster Management Meeting.

28 August 2017
12 Bhadra 074

- Integrated Public Health campaign in flood and landslide affected districts meeting with health partners.

27 August 2017
11 Bhadra 074

- Meeting on Disaster & Epidemic Management Preparedness in flood and landslide affected districts.

25 August 2017
09 Bhadra 074

- Disaster Management Meeting.
- Health Cluster Meeting.

23 August 2017
07 Bhadra 074

- Situation update on flood and andslide.
- Supervision of flood affected districts Rautahat & Sarlahi.

30 August 2017
14 Bhadra 074

- Health Cluster coordination meeting.

31 August 2017
15 Bhadra 074

- Situation update on flood and landslide.

01 September 2017
16 Bhadra 074

- Disaster Management Meeting.

08 September 2017
23 Bhadra 074

- Health Cluster Meeting.

18 September 2017
02 Ashwin 074

- Health Cluster Meeting.

Fig 11: Health Sector timeline response to Nepal Flood and Landslide 2017

US Bangla Air Crash 2018

US Bangla Air Crash 2018

HEOC coordinated with NEOC and Rescue coordination center at Tribhuvan International Airport to rescue the passengers and dispatch them to nearby hub and satellite hospitals network. The available ambulance services within Kathmandu valley and under different organizations were coordinated to provide their services to transport victims of the crash. An after Action Review of the response was later conducted involving all the actors of the response which identified issues and way forward for similar incident response.

Kavre, Panchkhal Food Poisonings 2018

HEOC regularly communicated with nearby hub hospitals to be updated on the number of people affected and coordinated with other hub and satellite hospital networks within Kathmandu valley to standby and be in alert position for response, if required. Two hub and satellite hospital networks were involved in the management of 362 cases with coordination from the HEOC.
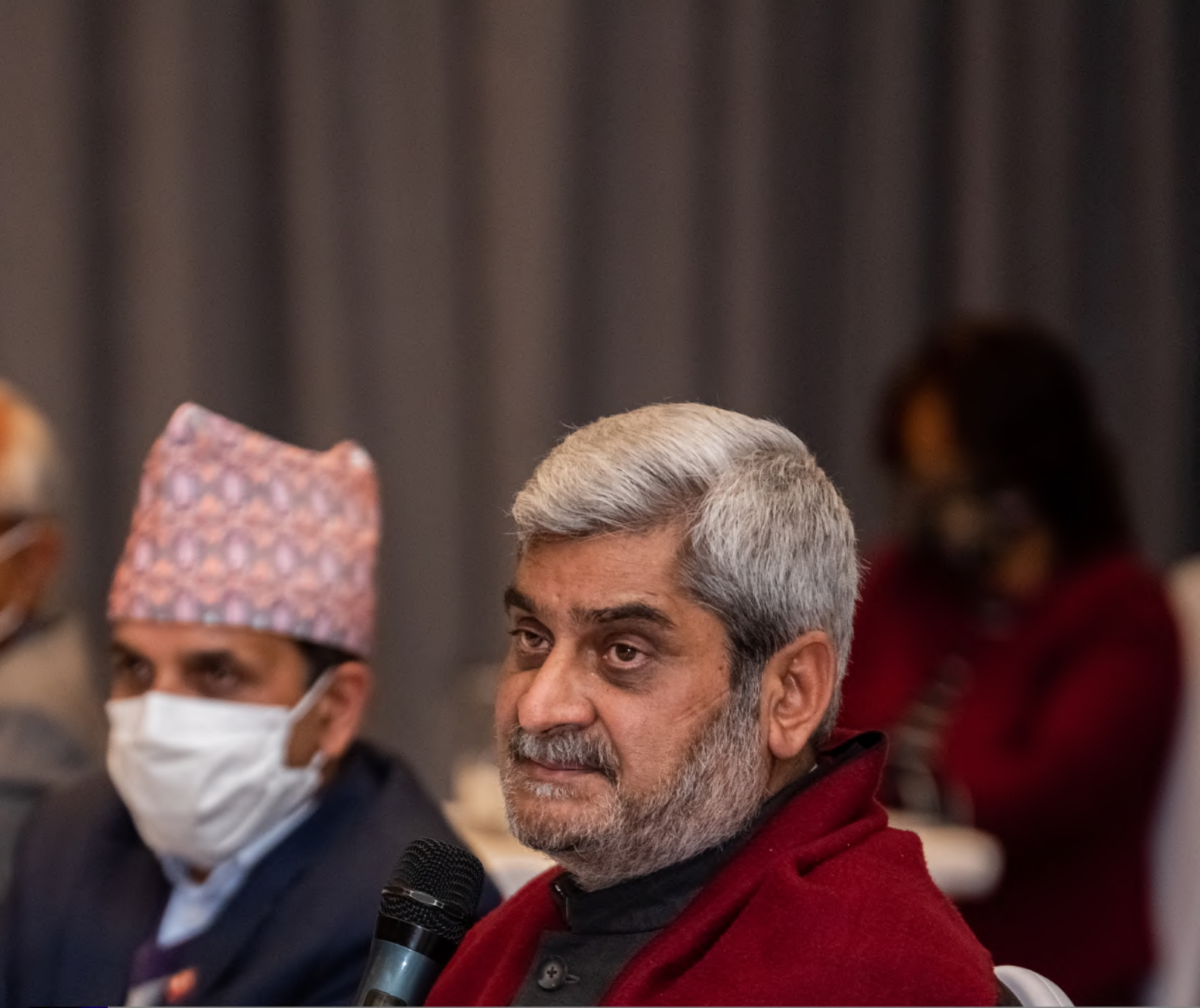
Dengue Outbreak 2019

HEMDU/HEOC coordinated with the Provincial Health Emergency Operation Centers (PHEOCs) and different health partners on surveillance, risk communication and social mobilization and treatment of affected population. Moreover, regular meetings were organized to orient and train engaged stakeholders at all levels on dengue and its mitigation and control measures.

Bara – Parsa Windstorm 2019

Incident occurs on March 31, 2019 at 20:00

Health Sector Response Bara, Parsa Storm 2019

HEOC

Day 2 (April 1, 2019)
Information flow & ICS

▸ First information received from NEOC (6:13 AM)
▸ ICS was activated at 8:00 AM
▸ Kathmandu hub n/w alerted
▸ Hon State Minister of MoHP chaired emergency coordination meeting at HEOC (10:00 AM)
▸ Hon DPM and Minister for MoHP, State Minister for MoHP, Secretary, DG, DoHS went to incident site to support response and monitoring

Day 3 (April 2, 2019)
Health Sector Coordination Meeting and EMDT

▸ Health Sector Coordination meeting on the chairmanship of Dr Sushil Nath Pyakuryal
▸ Temporary Information Management Center at Narayani Sub Regional Hospital
▸ Six EMDT mobilized to support response
▸ Health Secretary along with Division Chief, Health Coordination Division visited TUTH for situation updates.

Day 4 (April 3, 2019)
Field Level Coordination/ Meetings

A total of 3 meetings were held
▸ Meeting with the representatives of DoHS (FWD, EDCD, CSD, NHEICC, NPHL & NHTC) Centre for Mental Health & Counseling Nepal (CMC) and WHO-WHE carried out at Narayani Hospital
▸ Meeting with DPHO, Bara
▸ Meeting with Chief District Officer Bara and Parsa Districts

Day 5 (April 4, 2019)
Health Sector Coordination Meeting

· Health Sector Coordination Meeting on the chairmanship of Dr Dipendra Raman Singh, Chief, Quality Standard and Monitoring Division, MoHP at HEOC at 11:00 AM .
· Partners: WHO, UNICEF, UNFPA, NHSSP, NRCS, Americares, TPO Nepal, GIZ, NEPTA, HI, IFHR, NDF, World Vision International, ADRA Nepal, HKI, NEPTA

Day 6 (April 5, 2019)
Video Conferencing

▸ Video Conferencing HEOC, Dr Hemant Chandra Ojha with Field Coordinator Dr Madhab Prasad Lamsal on ongoing response and situation updates
▸ Template shared to field coordinators to identify health sector needs.

Day 7 (April 6, 2019)
Field Level Coordination/ Meetings

▸ HEOC coordinated with field coordinators for situation updates
▸ Progress Report Collection

Day 8 (April 7, 2019)
Video Conferencing

▸ Brief meeting with Dr Dipendra Raman Singh, Division Chief, MoHP, Dr Ramesh K Kharel, field coordinator & Dr Hemant Chandra Ojha with Chuda Mani Bhandari, Chief, HEDMU on situation updates
▸ Video Conferencing with PHD, Hospital, Health Office, Health Coordinators, Partners on situation updates chaired by Chief, HEDMU/HEOC

Day 9 (April 8, 2019)
Health Sector Coordination Meeting

Health Sector Coordination Meeting on the chairmanship of Chief Specialist, Dr Sushil Nath Pyakuryal at HEOC.
Partners: WHO, UNICEF, Americares, Humanity and Inclusion, NDF, ADRA Nepal

Day 10 (April 9, 2019)
Video Conferencing

▸ HEOC coordinate with field coordinators for situation updates
▸ Video Conferencieng with field coordinator Dr Madhab Prasad Lamsal on health sector needs and situation updates.

Day 11 (April 10, 2019)
Field Level Coordination/ Meetings

▸ Progress Report Collection
▸ HEOC coordinated with field coordinators for situation updates

Day 12-16 (April 11-15, 2019)

▸ HEOC coordinated with field coordinators for situation updates
▸ Progress Report Collection

Day 17 (April 16, 2019)
Coordination Meeting

▸ Progress Report Collection
▸ HEOC coordinated with field coordinators for situation updates
▸ Bara, Parsa Storm Coordination Meeting

Fig 12: Health Sector response to Bara - Parsa Windstorm 2019

COVID-19

Besides the general coordination and information management roles, HEOC during COVID-19pandemic also played a crucial role in strengthening health system through tools and products as a part of COVID-19 response. Addition of health institutions along with upgrading of infrastructures up to the municipal level; the IMU application for information management; the Hamro Swasthya platform for interactive information dissemination; the testing of OSCAR platform for capturing legacy information; use of call center to provide information to as well as counsel health workers; initiation of EMDT; rolling out of national telemedicine network; linkage of community, pre-hospital, hospital and post-hospital care etc. that were targeted towards COVID-19 response also support in health systems strengthening.
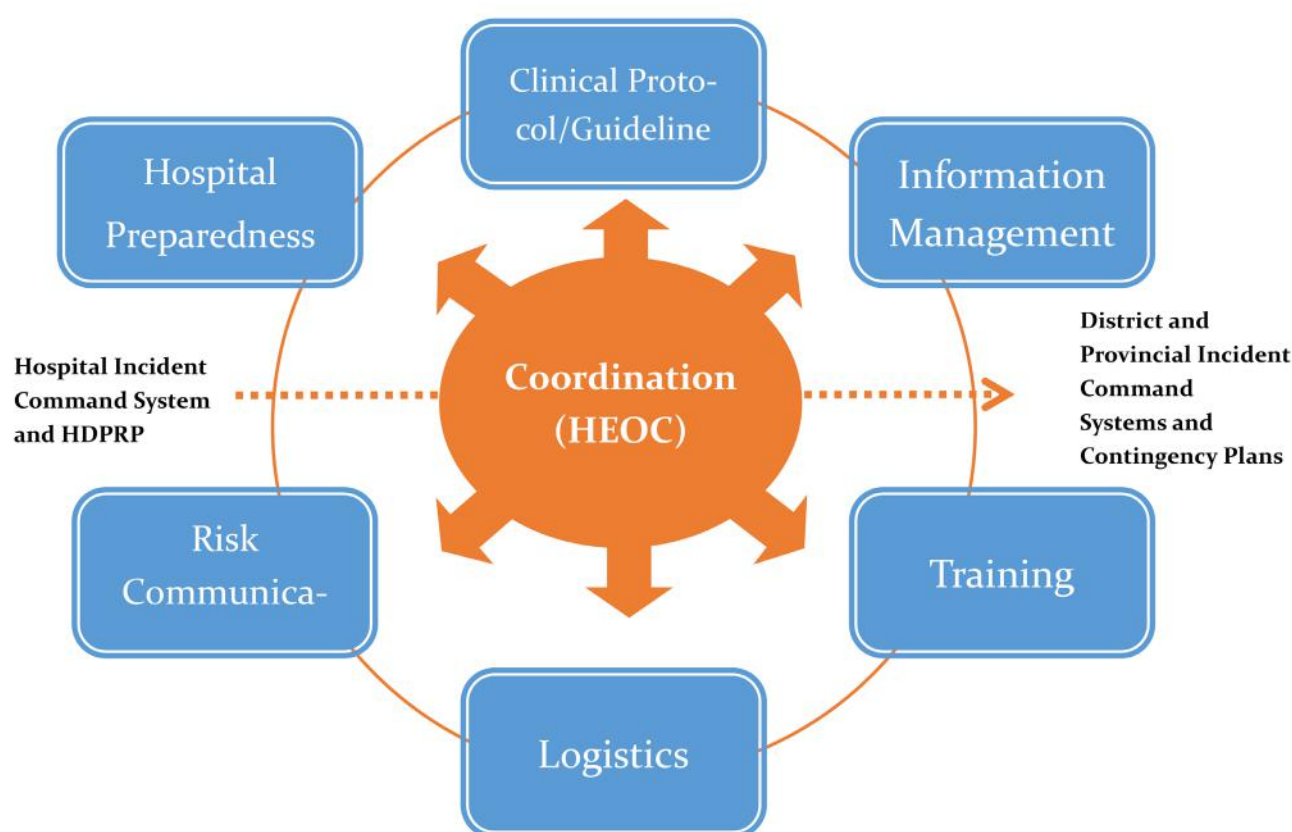
Fig 12: HEOCs' role during COVID-19

Other Response Activities: Health Sector preparedness for high level visits and events

HEOC was in-charge of managing ambulances, medicines and other equipment during visits of high-level delegates and program involving high level delegates from within the country or from other countries. HEOC also coordinated with hub and satellite hospitals network, managed communications and held regular meetings, as well as coordinated with the concerned line ministries for successful organization of those events.

Table 3: High level visit and events

Date	Activities
11-12 May 2018	Indian Prime Minister visit to Nepal
30-31 Aug 2018	Bay of Bengal Initiatives for Multi-Sectoral, Technical and Economic Cooperation (BIMSTEC)
28 Nov 2018 - 04 Dec 2018	Asia Pacific Summit 2018
12-13 Oct 2019	Nepal state visit by His Excellency Mr. Xi Jinping, the Presidentof People's Republic of China

Glimpse of preparedness meeting for High level visit and events

CHALLENGES AND WAY FORWARD

Processes

During disasters and emergencies in which MoHP-ICS was activated, lack of clear signals and triggers for the auto activation of ICS was identified. This must be aligned with the provisions in the relevant national acts related to disaster response and its implications for disasters due to infectious hazards and other public health emergencies in contrast to disasters due to other hazards wherein health is not impacted immediately or intensely.

In addition, response activities coordinated by the National and Provincial HEOCs were not in harmony even though the ICS acted as a one door response coordination mechanism.

Nevertheless, HEOC is continuously updating the existing SoPs of National and Provincial HEOCs that will also include the ICS structure trigger for automatic ICS activation and roles and functions of each of its components for effective and coordinated response.

HEOC also needs to act as the pivotal point for coordinating community, pre-hospital and post- hospital care during disasters but is currently not fully equipped to facilitate this critical continuity of care. In order to link the vertical components of coordination (intra- and inter-sectoral and three tier governance) and horizontal components of continuity of care, an integrated mechanism that seamlessly functions across these boundaries and interfaces for disaster preparedness and response involving all key stakeholders in the various sectors and levels has to be envisioned and operationalized.

The development and endorsement of a multi-hazards health sector contingency plans for emergencies and disasters that clearly spells out these challenges and the consensus solutions as early as possible, preferably during the recovery phase of the pandemic using the learning these and past emergencies is the need of the hour.

One component that would facilitate the vertical and horizontal coordination effectiveness of the HEOCs network that has been envisaged in the use of the single number as the HEOC hotline with multiple functionalities.

The current iteration of this mechanism being considered is shown in the figure below.
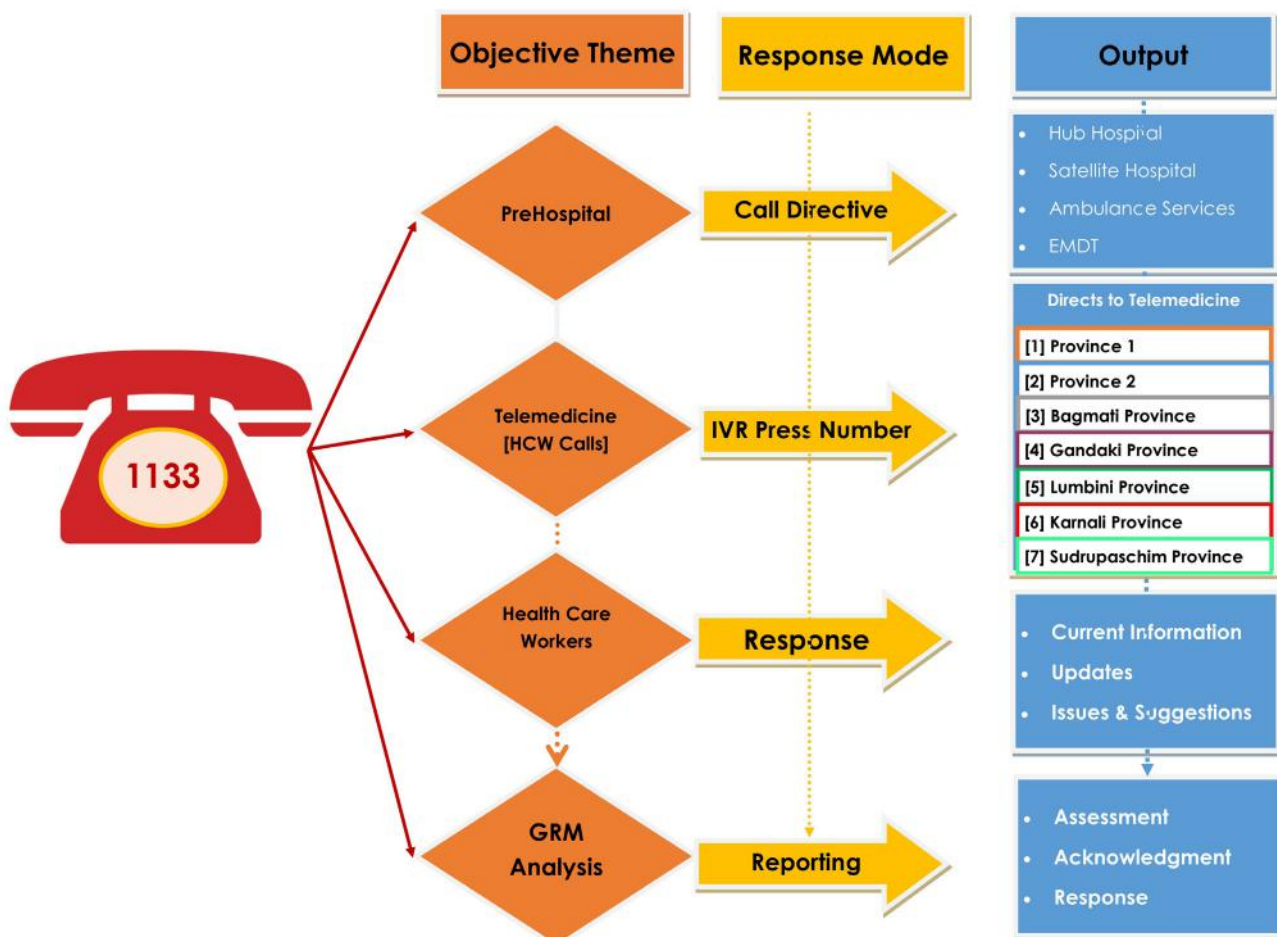
Fig 14: Plan to strengthen HEOC as command and monitoring center for disaster and emergency preparedness and response

Fig 15: Categories of ambulance (A, B and C)
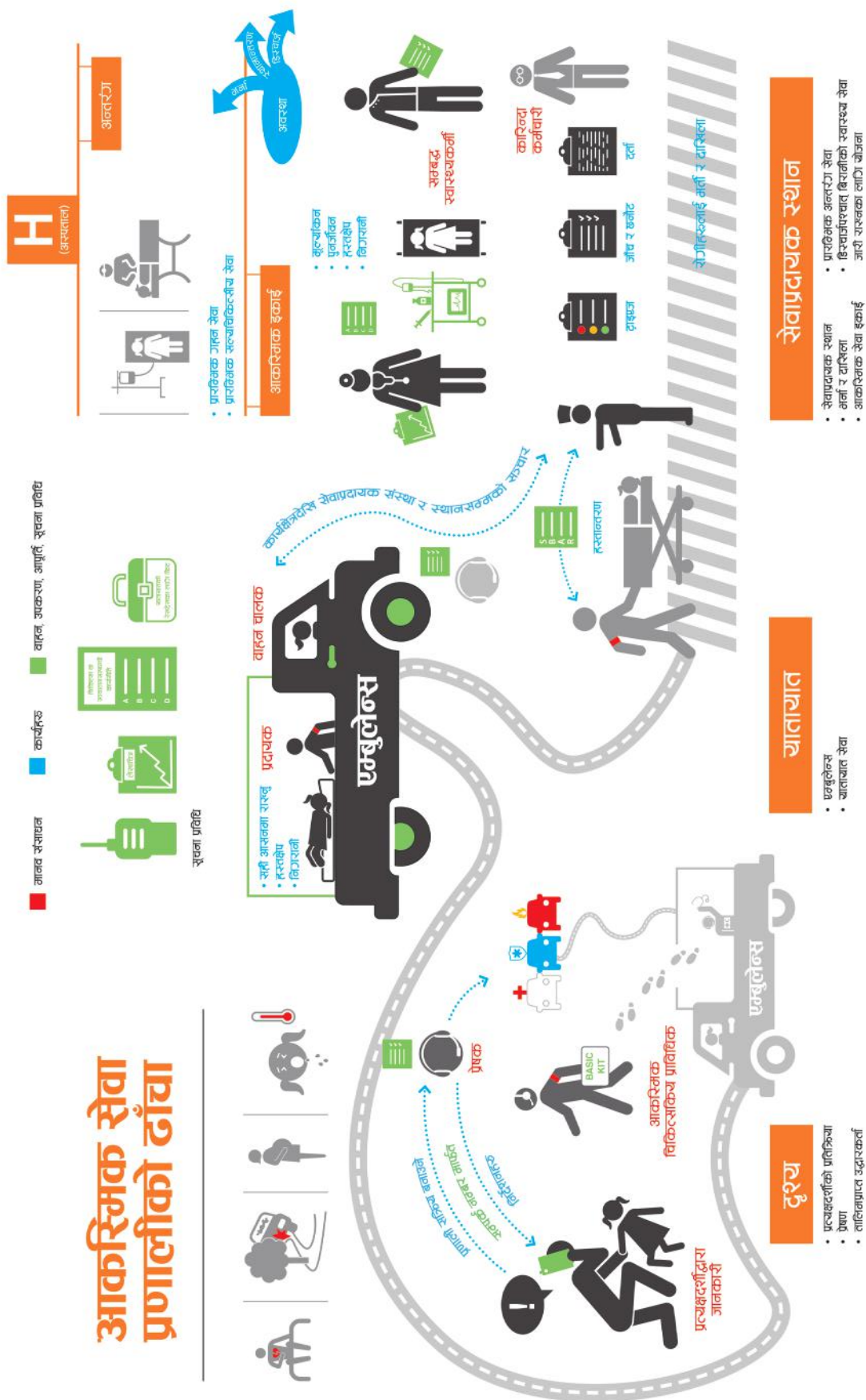
Fig 16: WHO Emergency Care System

Provisions

During the Nepal Earthquake 2015, the sole HEOC functioned from two working rooms fashioned out of shipping containers along with one meeting hall and the usage of temporary spaces (tents). Though by the time of COVID-19 response, there were an additional two working rooms, the added space was not enough due to the requirement of physical distancing due to COVID-19 pandemic. Even without the requirement of physical distancing the entire ICS cannot function from the HEOC when required due to space and infrastructure provision constraints. Moreover, the uncertainty regarding the positioning of HEOC due to imminent change in circumstances such as the shifting of the MoHP to Singha Durbar may also affect the infrastructural arrangements of HEOC. While there is a plan to establish an Information Management Unit (IMU) in support of the HEOC that would take care of the physical distancing requirements, this plan is yet to be realized and would be impacted by the same changing circumstances. The hybrid working system (virtual and physical) which was practiced during COVID-19 pandemic

has provided enough evidence that such a working system would be more suitable for the HEOC moving forward. This also emphasized the importance of a dispersed type of network with robust information and communication mechanisms and tools to circumvent the need for establishing a large HEOC at one location which is not prone to disruption given the earthquake related vulnerability of Nepal.

At the sub-national level, presence of two PHEOCs with temporary structures constrained those PHEOCs facilitate effective coordination during response. Moreover, inadequate Infrastructure Communication and Technology (ICT) infrastructure limited the establishment of harmonized functioning within the national and provincial HEOCs network; hub and satellite hospital network and other EOCs. HEOC with support of WHO has been working to finalize the process of converting the temporary PHEOCs to permanent ones, providing required ICT support and developing standards for networking once the site

for the establishment of these PHEOCs are identified by the provincial governments.

None of the HEOCs are currently fully provisioned financially with budgets to undertake all the routine functions needed during the inter emergency periods and the surge interventions needed during the response period. They are all currently dependent on WHO and partner support.

The full financial requirements for the functioning of the HEOCs during the entire disaster management cycle require the critically needed budget provision at the national and provincial levels.

Personnel

The roles and responsibilities of HEOC for disaster preparedness and response requires an adequate number of staff with the needed expertise and experience to discharge the secretariat role to MoHP and support the MoHP-ICS. However, only limited designated government staff are available with the surge staff also not being adequate and skilled enough to effectively accomplish assigned roles and responsibilities. Moreover, the roles and functions of HEOC demands highly skilled and expert personnel from different areas when acting as the secretariat to the MoHP-ICS. Even though WHO has provided support staff at all HEOCs for the technical support, the HEOC network required number of critical staff on the government payroll to perform all the assigned activities. This can be addressed as part of the government's intent to establish a National Center for Disease Prevention and Control going forward.

A HEOC requires competent and trained persons to achieve its objectives and function successfully.

Personnel needs for maintaining and operating a HEOC include both routine and surge staff. A roster of competent and trained personnel must be maintained for each routine and surge position. Depending on the functions, generic terms of reference should be maintained for surge personnel.

Some positions are hazard specific and/or related to the scale of the event, such as those positions responsible for coordination of partners. Some personnel may not be assigned full-time to the HEOC, others may be required full-time, and if the center is required to operate 24/7 and over a prolonged period of time, it should have sufficient surge staff to cover standard shifts of either 8 or 12 hours. This will commonly require redundancy (two or three backup personnel for each position).

The roles of personnel within the HEOC should be aligned as closely as possible with their established skill sets. HEOC personnel are required at varying levels to satisfy the following three criteria:

1. They must have relevant subject matter expertise: they must possess knowledge about the type of emergency event being managed or the management function they are performing.

2. They must have the authority and responsibility to commit or access institutional resources.

3. They must have been trained in the functions and operations of a HEOC.

All personnel recruited to the HEOC must be committed to teamwork and emergency management work and should be instructed to respect the fact that teamwork, collaboration and cooperation are absolute requirements. There are four ways in which personnel can learn or be assisted to engage effectively in a HEOC:

1. Where possible and practical, involvement in developing or improving the HEOC

2. Receiving training to develop required competencies for responsibilities within the HEOC.

3. Being oriented to and practicing assigned roles in a variety of ways (Simulation/ exercising).

4. Evaluating the effectiveness of the HEOC and plans after simulation exercises and events.

Products

During health emergencies or disasters, timely and robust collection, collation, analysis andsynthesis of critical situational and operational information and generation of relevant information products is vital for decision support, policy planning and development of concept of operations (CONOPS) for response. When responding to different disasters, challenges in uniform, timely and robust information channeling was identified. Use of different tools to collect similar information, hesitancy in one door sharing of information and duplication of efforts in information handling caused hindrance to rapid evidence-based decision support and planning of response activities. Moreover, there were repeated bypassing of the HEOC for development and dissemination of documents that required to be channeled through the HEOCs.

Thus, a more integrated and harmonized information management and decision support system platform is required for rapid CONOPS generation for planning and response strategic and activities. HEOC with support from WHO has launched the establishment of an Information Management Unit (IMU) and has developed an IMU software to overcome the issues in information management and product generation. Moreover, in collaboration with kfw, OSCAR, an information integration and decision support platform is in the process of development and implementation testing. Such a platform provide the mechanism to combine the needed operational level information with all the information generated from/ through legacy information systems in the MoHP and the health sector institutions, stakeholders and partners for the development of real-time decision support products and dashboards tailored to different types of response stakeholders and levels of response institutions and interventions.

Another challenge encountered is the lack of an integrated communication mechanism and platform for the development and dissemination of risk information to the public and situational information to the media and other stakeholders. The HEOC with the support of WHO, UNICEF and other Risk Communication and Community Engagement (RCC) partners has been able to enable the MoHP to set in place systematic media and risk communication mechanisms during the COVID-19 pandemic. The lessons from this needs to be consolidated and institutionalized going forward in collaboration with the NHEICC and other key health and other sectors stakeholders.

ANNEX

Annex 1: HEOC Chiefs and Staff

HEOC Chiefs

Dr Guna Raj Lohani

Dr Bhola Ram Shrestha

Dr Dipendra Raman Singh

Mr Sagar Dahal

Dr Samir Kumar Adhikari
(Present)

WHO Support Staff Stationed at HEOC

Dr Subash Neupane

Dr Gaurav Devkota
(Present-FMO)

Mr Bimal Singh Bista
(Present-Consultant)

Mr Satya Acharya
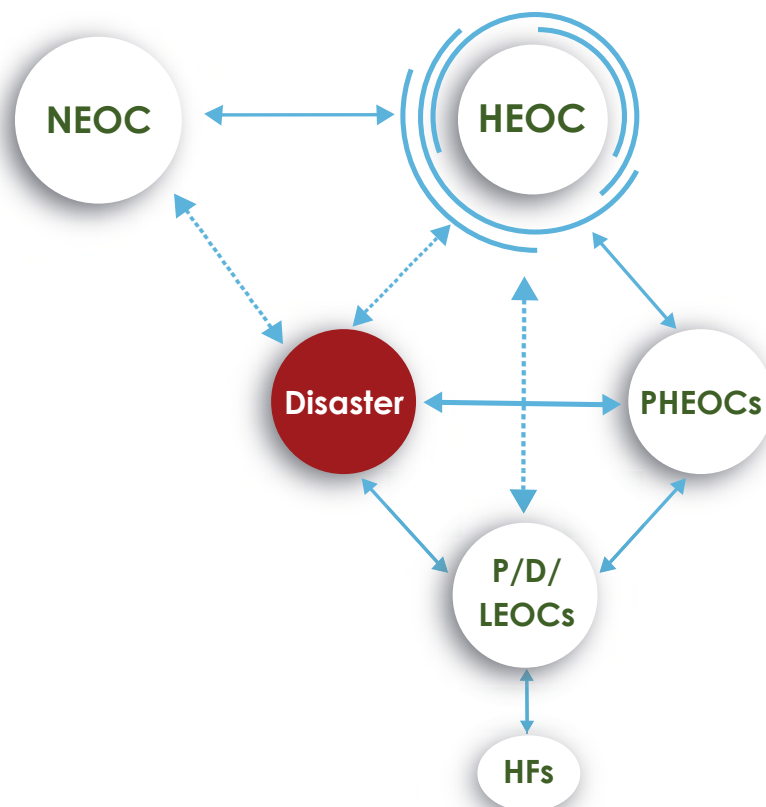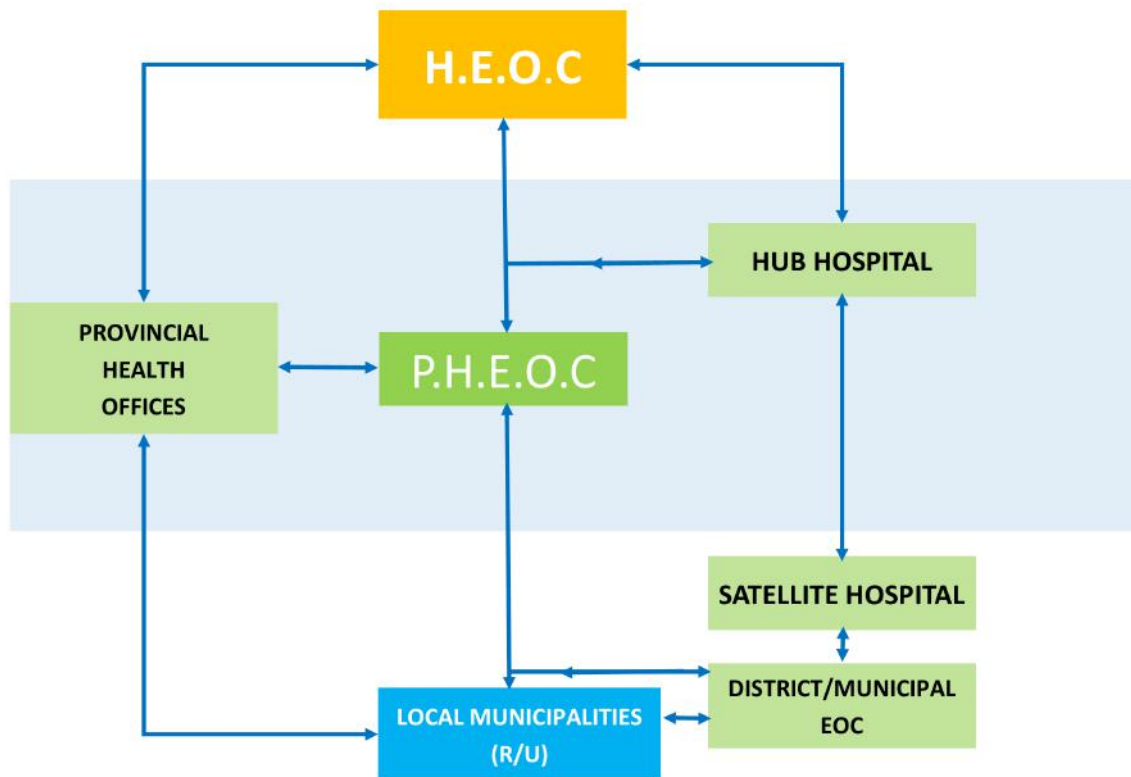

Dr Madhab Prasad Lamsal

Mr Chuda Mani Bhandari

Mr Sanjib Gautam
(Present- IMA)

Mr Ganesh Singh Dhami
(Present-Admin Support)

Annex 2: Information flow

Annex 3: List of Hub hospitals

S.N	Hub Hospitals	Province	District	Satellite Hospitals and Catchment Area
1	B.P Koirala Institute of Health Sciences	1	Sunsari	Sunsari, Dhankuta, S ankhuwasabha, Bhojpur, Terhathum district government and other private hospitals in the region.
2	Mechi Hospital	1	Jhapa	Jhapa, Taplejung, Panchthar, Ilam district government and private hospitals in the region.
3	Koshi Hospital	1	Morang, Biratnagar	All government and private hospitals in the Morang District
4	Gajendra Narayan Singh Sagarmatha Hospital	2	Saptari	Okhaldhunga, Solukhumbu, Khotang, Udayapur, Saptari, Siraha and government and private hospitals in the region.
5	Janakpur Hospital	2	Dhanusha	Dhanusa, Mahottari, Sarlahi, Sindhuli district hospitals and all other Government and private hospitals in the region.
6	Narayani Sub-Regional Hospital	2	Parsa	Bara, Parsa, Rautahat district hospitals and all Government and private hospitals in the region.
7	Dhuikhel Hospital	Bagmati	Kavrepalan-chowk	Sindhupalchowk, Kavre, Dolakha, Ramechap, Sindhuli district hospitals and all other Government and private hospitals in the region.
8	Bir Hospital	Bagmati	Kathmandu	Defined zone of Kathmandu.
9	Birendra Army Hospital	Bagmati	Kathmandu	Defined zone of Kathmandu.
10	TU Teaching Hospital	Bagmati	Kathmandu	Defined zone of Kathmandu.
11	Patan Hospital	Bagmati	Lalitpur	Defined zone of Lalitpur.
12	Civil Service Hospital	Bagmati	Kathmandu	Defined zone of Kathmandu.
13	Bhaktapur Hospital	Bagmati	Bhaktapur	Defined zone of Bhaktapur.

14	Bharatpur Hospital	Bagmati	Chitwan	Chitawan, Makawanpur district hospitals and all other Government and private hospitals in the region.
15	Pokhara Health Science Academy Hospital	Gandaki	Kaski	Kaski, Lamjung, Tanahu, Gorkha, Syangja, Parbat, Manang, Mustang district hospitals and all Government and private hospitals in the region.
16	Dhaulagiri Hospital	Gandaki	Baglung	Parbat, Myagdi, Mustang, Baglung Distict Hospitals and all other Government and Private Hopitals in the Region.
17	Lumbini Hospital	Lumbini	Rupandehi	Rupandehi, Nawalparasi, Palpa, Gulmi, Arghakhanchi, Kapilvastu Distict Hospital and all Government and Private Hopitals in the Region.
18	Rapti Provincial Hospital	Lumbini	Dang, Tulsipur	Rolpa, Pyuthan, Salyan, Dang Distict Hospitals and other Government and Private Hopitals as defined within the Region.
19	Rapti Academy of Health Sciences	Lumbini	Dang, Ghorahi	Rolpa, Pyuthan, Salyan, Dang Distict Hospitals and other Government and Private Hopitals as defined within the Region.
20	Bheri Hospital	Lumbini	Banke	Banke, Bardia Distict Hospitals and all other Government and Private Hopitals in the Region.
21	Karnali Academy of Health Sciences	Karnali	Jumla	Mugu, Humla, Jumla, Dolpa, Kalikot Distict and all other Government and Private Hopitals in the Region.
22	Mid-Western Regional Hospital	Karnali	Surkhet	Surkhet, Dailekh, Jajarkot District Hospitals and other Government and Private Hopitals in the Region.
23	Far-West Sub Region-al Hospital	Sudurpash-chim	Dadeldhura	Achham, Bajura, Bajhang, Darchula, Baitadi, Doti, Dadeldhura District Hospitals and all other Government and Private Hopitals in the Region.
24	Seti Hospital	Sudurpash-chim	Kailali	Kailali Distict Hospitals and all other Government and Private Hopitals in the Region.
25	Mahakali Hospital	Sudurpash-chim	Kanchanpur	Kanchanpur Distict Hospitals and other Government and Private Hopitals in the Region

Annex 4: Agenda for Training on Hospital Disaster Preparedness & Workshop for Planning, 7–10 February 2019

Day 1

Time	Content	Facilitator
9:00 - 10:00	Registration	
10:00 - 10:30	Inaugural	
10:30 - 10:45	Tea Break	
10:45 - 11:30	Overview of Disaster and Disaster Risk Management in Nepal	
11:30 - 12:15	Inter-agency Coordination and cluster system	
12:15 - 12:45	HEOC: Role, Coordination, Information Management and communication at federal and provincial levels	
12:45 - 13:30	Lunch	
13:30 - 14:15	Introduction of Hospital Safety (Structural, Non –Structural and Functional)	
14:15 - 16:00	Hub and satellite hospitals networks concept and role Preparedness and response - Pre, Hospital and Post-Acute/Hospital care areas Deployment Mechanism - Mass casualties (eg. RTA); Outbreaks/Epidemics; Major emergencies (eg. earthquake, flood)	
16:00 - 16:30	Tea Break	
16:30 - 17:00	Preparedness meeting with facilitator team for Nepalgunj/ Lamahi orientation	

Day 2

Time	Content	Facilitator
9:00 - 10:30	Reproductive Maternal Neonatal Child and Adolescent Health	
10:30 - 11:00	Tea break	
11:00 - 12:30	Mental Health Psycho Social Support	
12:30 - 13:30	Lunch	
13:30 - 15:00	Emergency Water Supply Sanitation and Hygiene	
15:00 - 15:30	Tea Break	
15:30 - 16:30	Health Care Waste Management	

Day 3

Time	Content	Facilitator
9:00 - 10:30	Hospital committees, Triage, Routes, Roles and Responsibilities, epidemic outbreak	
10:30 - 11:00	Hospital Preparedness Planning	
11:00 - 11:30	Tea Break	
11:30 - 12:30	Hospital internal disaster and Evacuation planning	
12:30 - 13:30	Lunch	
13:30 - 14:00	Hospital Incident Command System (HICS)	
14:00 - 15:30	Crowd control, Disaster supply, Hospital Capacity, Job list, Clip board, Media and relatives	
15:30 - 15:45	Tea Break	
15:45 - 16:30	Surge capacity and resource mapping	

Day 4

Time	Content	Facilitator
9:00 - 10:30	Coordination, communication and Early deployment team	
10:30 - 11:30	Table top exercise	
11:30 - 12:30	Presentation	
12:30 - 13:00	Closing	

Annex 5: Agenda for Hospital Preparedness for Emergencies Training/ workshop

Hub-hospital Networks Preparedness and Response Readiness Capacity Building and Planning Workshop

WHO Tech. Session, HOPE, HDPR Course Schedule, Nepalgunj and Dhangadi (30 Sep- 9 Oct., 2018)

Day 1 (1st Oct., Monday)

08:00-08:15	Registration
08:15-09:00	Opening ceremony and group photo
09.00-09:30	Pre -Test Tea Break
09:30-11:00	Lesson1: Course Introduction
11.00-11:15	Tea Break and Group photo
11:15-12:15	Lesson 2: Overview of Disasters
12:15-13:15	Lesson 3: Disaster Risk Management
13:15-14:00	Lunch
14:00-14:45	Lesson 4: Disaster Epidemiology and Patterns of Injury
14:45-15:45	Lesson 5: Overview of Hazards
15:45-17:00	Lesson 6: Structural Components
17:00-17:45	Exercise1: Structural Components Evaluation/ Working Tea Break
17:45-18:00	Review and Questions / Daily Course Evaluation

Day 2 (2nd Oct.,Tuesday)

08:00-08:15	Review
08:15-09:15	Lesson 7: Non-structural Components
09:15-10:15	Lesson 8: Functional Collapse of Hospitals
10:15-10:30	Tea Break
10:30-11:15	Lesson 9: Techno-Industrial Disasters
11:30-12:00	Lesson 10: Complex Emergencies
12:00-12:30	Lesson 11: Epidemics and Emerging Infections
12:30-13:15	Lunch
13:15-13:45	Lesson 12: Mass Casualty Incident
13:45-14:15	Exercise 2: PICE
14:15-14:45	Lesson 13: Mass Gathering Medical Care
14:45-15:00	Tea Break
15:00-15:45	Lesson 14: Principles of Disaster Medicine
15:45-16:30	Lesson 15: Pre-Hospital Care
16:30-17:00	Lesson 16: Triage
17:00-17:30	Exercise 3: Triage
17:30- 17:45	Review and Questions / Daily Course Evaluation

Day 3 (3rd Oct., Wednesday)

08:00-08:15	Review
08:15-09:30	Lesson 17: Hospital Incident Command System
09:30-10:45	Exercise 4: HICS Exercise/ Working Tea Break
10:45-11:30	Lesson 18: Hospital Preparedness Planning
11:30-12:15	Lesson 19: Emergency Department
12:15-12:45	Lesson 20:Hospital Internal Disasters
12:45-13:30	Lunch
13:30-14:15	Lesson 21: On-site Medical Care
14:15-15:30	Exercise 5: Hospital Internal Disasters/ Working Tea Break
15:30-16:15	Lesson 22: Disaster Risk Communication
16:15-17:00	Lesson 23: Inter-agency Coordination
17:00-17:30	Lesson 24: Mass Fatality Management
17:30-18:00	Lesson 25: Psychosocial Consequences of Disasters
18:15-18:30	Exercise 6: Handing over of exercise
18:30-18:45	Review and Questions / Daily Course Evaluation

Day 4 (4th Oct., Thursday)

08:00-08:15	Review
08:15-08:45	Lesson 26: Return to Normal Health operations
08:45-09:15	Post Test
09:15-09:30	Tea Break
09:30-12:00	Exercise 6: MCI Management Exercise
12:00-12:45	Closing Ceremony
12:45-13:30	Lunch
13:30-14:00	Introduction to HDPR program
14:00-15:00	Disaster committee, triage & spaces, Crowd control, media & relatives handling
15:00-16:00	Job list, Surge capacity, important detail, Hospital capacity
16:00-16:30	Tea break
16:30-17:30	Early deployment, coordination and communication, epidemic disaster
17:30-18:30	Roster and inventory
18:30-18:45	Closure with assignment to Hub for PPT

Day 5 (5th Oct., Friday)

08:00-08:30	Presentation by Hub
08:30-09:30	Finalization of plan
08:30-10:30	Table top exercise inject
10:00-11:00	Tea break
11:00-12:00	Presentation in each group
12:00-13:00	Closing ceremony
13:00-14:00	Lunch

Annex 6 : 39 Action Priorities of ECS

1. Develop a nation-wide status report (including all provinces) on emergency care (with WHO support), including burden of acute conditions and current status of everyday emergency care (HEOC and WHO)

2. Developing standardized protocols for handover of patients from prehospital providers to facilities

3. Develop a strategic plan for reducing overcrowding of emergency units, including consideration of length of stay and establishing overcrowding protocols

4. Develop domestic violence screening protocols for emergency unit patients, with linkage to OCMC

5. Establish a clear mandate for a lead government agency to coordinate prehospital and facility-based emergency care, and to liaise with emergency response programs

6. Review WHO standards on essential emergency care services for inclusion in current service and benefit package development, including public health insurance benefit package

7. Develop a mechanism for regular communication of policies and procedures to clinical providers

8. Implement standardized clinical forms with embedded standard data points for emergency units (based on review of existing form and WHO template) and in pre hospital setting

9. Establish one single, toll-free, three-digit, universal (nationwide) access number for emergency care services corresponding to international standards (consider 112)

10. Develop prehospital care protocols and supportive supervision systems

11. Advocate to Ministry of Transport for revision of existing national traffic laws for ambulances and lights/sirens for civilian vehicles, and incorporate into National Ambulance Operation Guidelines

12. Incorporate emergency care elements into existing hospital accreditation standards

13. Complete creation and coordination of subnational EOCs as per current plan

14. Develop a bystander protection law

15. Implement WHO emergency and trauma care registry (with automated aggregation reporting) based on standardized data points embedded in clinical chart, beginning with provincial and tertary levels

16. Establish simple emergency care quality improvement programme based on standardized charts and registry

17. Develop system wide standards and protocols for key emergency unit processes (handover, formal triage, transfer, referral, admission, discharge) appropriate to level (WHO tools available).

18. Develop system wide condition-specific clinical protocols for emergency unit clinical management of key conditions appropriate to level.

19. Create a requirement for dedicated emergency and trauma care clinical training (including formal triage training) into undergraduate medical and nursing curricula.

20. Establish facility-level security and safety protocols at each emergency unit to protect staff and infrastructure from violence

21. Develop security and safety protocols for emergency care personnel to protect from violence and risks in all settings

22. Disseminate information about national emergency preparedness and response strategies to service providers

23. Developing standardized protocols for inter facility transfers patients and referral

24. Establish mechanism for utilization of emergency care data in system planning efforts

25. Develop a formal prehospital system including centralized dispatch, destination triage, time targets for priority calls, field to facility communication, and mechanisms for supportive clinical guidance for the prehospital providers (protocols or advice line)

26. When service readiness appropriate, develop public education and dissemination campaign on appropriate use of emergency care access number

27. Establish dedicated training and certification pathway for professional prehospital providers

28. Develop a strategy for government-run national poison control center consultation for providers and public

29. Develop regulation mandating initial emergency care prior to payment (including registration payment and co-pays)

30. Expand 24-hour availability of essential emergency laboratory services and timely results reporting at first-level and tertiary emergency units

31. Expand 24-hour availability of essential emergency radiology services and timely results reporting at first-level and tertiary emergency units

32. Expand postgraduate training programmes in emergency medicine to other universities.

33. Incorporate chemical, biologic, radiologic emergencies elements into current emergency response plans

34. Expand emergency care staff training to include strategies to address violence in the workplace, including conflict resolution

35. Establish mandate requiring that the universal access number be free on all fixed and mobile lines from all telecommunication companies

36. Implement mechanism for monitoring with inspection /verification at regular intervals to strengthen the implementation and enforcement National Ambulance Operation Guideline 2018 including equipment standards

37. Create and fund a dedicated budget stream for prehospital and facility-based emergency care

38. Establish central standards for content and certification of first aid trainings

39. Develop a strategy for the establishment of a dedicated emergency fund at the federal, provincial and local level, to ensure everyday emergency care availability to all, and including incorporation of ECS strengthening into disaster and preparedness service expenditures

Annex 7: List of health partners

S.N.	Health Cluster Partners		
1	WHO	10	ADRA Nepal
2	UNICEF	11	NHSSP
3	BNMT	12	NRCS
4	Fairmed Nepal	13	Terre des hommes (Tdh) Foundation
5	Family Planning Association of Nepal	14	UNFPA
6	GIZ	15	Singh Health
7	Handicap International	16	WaterAid Nepal
8	IsraAid	17	World Vision International Nepal
9	Medecins du Monde (MdM) France		...

GALLERY

National HEOC

Province 1

Province 2

Bagmati Province

Gandaki Province

Lumbini Province

Karnali Province

Sudurpaschim Province

PHEOCs

FINANCIAL CONTRIBUTION RECEIVED BY WHO FROM THE FOLLOWING PARTNERS HAVE BEEN USED FOR EMERGENCY PREPAREDNESS AND RESPONSE ACTIVITIES INCLUDING ESTABLISHMENT OF THE HEOC NETWORK

- Department of Foreign Affairs and Trade (DFAT), Australia
- Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO)
- Foreign, Commonwealth & Development Office (FCDO), United Kingdom / Department of International Development (DFID)
- Germany Federal Ministry of Health (BMG)
- Government of Azerbaijan
- Japan Private Kindergarten Association, Japan
- Ministry of Foreign Affairs, Estonia
- Ministry of Foreign Affairs, Finland
- Ministry of Foreign Affairs, Thailand
- Norwegian Agency for Development Cooperation (NORAD), Norway
- Office of Foreign Disaster Assistance (OFDA), United States of America
- United Nations Central Emergency Relief Fund (UN CERF)
- United States Agency for International Development (USAID)